

Etowah County Multi-Jurisdictional Hazard Mitigation Plan

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SECTION 2: EXECUTIVE SUMMARY

Background

The Robert T. Stafford Disaster Relief and Emergency Assistance Act and the Disaster Mitigation Act of 2000 (DMA2000) require local governments to develop and maintain a hazard mitigation plan to remain eligible for federal disaster assistance and grants. Section 322 (a) of DMA2000 states, “As a condition of receipt of an increased Federal share for hazard mitigation measures under subsection (e), a State, local, or tribal government shall develop and submit for approval to the President a mitigation plan that outlines processes for identifying the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government.” Further, Section 322 (b) of DMA 2000 states, “Each mitigation plan developed by a local or tribal government shall—(1) describe actions to mitigate hazards, risks, and vulnerabilities identified under the plan; and (2) establish a strategy to implement those actions.”

Organization of the Plan

The Etowah County Multi-Jurisdictional Hazard Mitigation Plan is organized to parallel the structure of the Alabama State Hazard Mitigation Plan. The plan has six sections:

- Section 1. Plan Distribution
- Section 2. Executive Summary
- Section 3. Federal Requirements
- Section 4. Plan Approval, Adoptions, and Assurances
- Section 5. The Planning Process
- Section 6. Risk Assessment
- Section 7. Mitigation Strategy
- Section 8. Plan Maintenance Process

Highlights of the Plan

The purpose of this plan is to identify hazards that pose a threat to life, property, and the environment in Etowah County. The plan goes further by addressing strategies to eliminate or lessen the effects of the identified hazards. The following is a brief summary of each section of the plan.

Federal Requirements

Section 3 reviews the Federal requirements of local jurisdictions in regards to mitigation planning. It gives an in depth review of Title 44, Section 201.6 in the US Code of Federal Regulations, which explains the requirements of local mitigation plans.

Plan Approval and Adoption

Section 4 discusses the process for plan approval by the Hazard Mitigation Planning Committee and adoption by the local governments in Etowah County.

The Planning Process

Section 5 discusses the planning process that went into developing this plan. It was developed using guidance from FEMA 386-1: Getting Started: Building Support for Mitigation Planning. This process was managed by the Gadsden/Etowah County Emergency Management Agency.

Subsection I discusses the purpose and scope of the plan. It defines the purpose as, “to identify community policies, actions, and tools for implementation over the long term that will result in the reduction of risk and potential for future community losses.” It lays out the scope of the plan to cover, “all jurisdictions and unincorporated areas within the geographic boundaries of Etowah County.

Subsection II assesses community support, and how to rally community support for mitigation planning. It states that by including all parts of the county, the planning team will be able to create partnerships, better address issues which cross jurisdictional boundaries, and encourage the pooling of resources. Three aspects are presented to assess whether the community is ready to begin the mitigation planning process. These aspects are knowledge, support, and resources. Questions for each of these aspects are included to assess how ready the community is for mitigation planning. Further, strategies for overcoming mitigation planning roadblocks are presented.

Subsection II also discusses the role of several entities in supporting the mitigation planning efforts in the community. These entities include the local governments, state government, Federal government, private sector, citizens, and academic institutions. It lays out strategies for garnering and leveraging support from recruiting a mitigation champion in the community; capitalizing on new regulations such as DMA2000; and expanding on current planning initiatives to include mitigation activities. It further discusses the National Flood Insurance Program, the Community Rating System (CRS), the Flood Mitigation Assistance Program (FMA), and the Pre-Disaster Mitigation Program (PDM).

Subsection II then discusses resources that can be used for mitigation planning. These include technical resources (planning departments, engineering departments, GIS, State Geologist, etc.), financial resources (PDM, FMA, Hazard Mitigation Grant Program, etc.). It closes with a brief discussion of human resources which can be used to support mitigation planning.

Risk Assessment

Section 6 covers the risk assessment for Etowah County. The risk assessment was developed using several inputs. First, the Hazard Mitigation Planning Committee took into account data from past events, dates, loss estimates, and magnitudes. This information came from the National Oceanic and Atmospheric Association, the US. Geological Survey, the Geological Survey of Alabama, Alabama Power, the Alabama Emergency Management Agency, the Federal Emergency Management Agency, local and state fire agencies, and from local and national media sources, among others. Input from the public, through the Household Natural Hazard Preparedness Questionnaire (see Annexes C and D).

The basis for determination of the hazards to be dealt with in this plan was the nature of the hazards in the county, the history of hazards in the county, and the probability of hazards in the county. Each hazard was profiled on each of these points. Based on the information gathered, the Hazard Mitigation Planning Committee determined the hazards which will be dealt with in this plan are:

1. Tornadoes (Subsection I)
2. Severe Thunderstorms (Subsection II)
3. Floods (Subsection III)
4. Winter Storms (Subsection IV)
5. Household Fires (Subsection V)
6. Landslides and Sinkholes (Subsection VI)

Mitigation Strategy

Section 7 outlines the overall goals for each risk, and lays out strategies to mitigate those risks. These strategies, which were developed by the Hazard Mitigation Planning Committee, were based upon recommended strategies and best practices. Per Federal requirements, the strategies address the following:

- A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
- A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
- An action plan describing how they will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
- For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Tornado mitigation is discussed first. Subsection A discusses the goals of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan are protecting life, protecting vital services, and protecting property. Subsection B discusses the mitigation actions for each goal of each jurisdiction are then laid out in table form. Subsection C discusses the action plan for implementing these actions and accomplishing the overall goals.

Severe thunderstorm mitigation is discussed next. Subsection A discusses the goals of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan are protecting life, protecting vital services, and protecting property. Subsection B discusses the mitigation actions for each goal of each jurisdiction are then laid out in table form. Subsection C discusses the action plan for implementing these actions and accomplishing the overall goals.

Flood mitigation is discussed next. Subsection A discusses the goals of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan are protecting life, protecting vital services, and protecting property. Subsection B discusses the mitigation actions for each goal of each

jurisdiction are then laid out in table form. Subsection C discusses the action plan for implementing these actions and accomplishing the overall goals.

Winter storm mitigation is discussed next. Subsection A discusses the goals of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan are protecting life, protecting vital services, and protecting property. Subsection B discusses the mitigation actions for each goal of each jurisdiction are then laid out in table form. Subsection C discusses the action plan for implementing these actions and accomplishing the overall goals.

Household fire mitigation is discussed next. Subsection A discusses the goals of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan are protecting life and protecting property. Subsection B discusses the mitigation actions for each goal of each jurisdiction are then laid out in table form. Subsection C discusses the action plan for implementing these actions and accomplishing the overall goals.

Landslide and sinkhole mitigation is discussed last. Subsection A discusses the goals of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan is protecting property. Subsection B discusses the mitigation actions for each goal of each jurisdiction are then laid out in table form. Subsection C discusses the action plan for implementing these actions and accomplishing the overall goals.

Plan Maintenance Process

Section 8 lays out the process by which the Etowah County Multi-Jurisdictional Hazard Mitigation Plan will be maintained. This section assigns responsibility to the Gadsden/Etowah County Emergency Management Agency for the maintenance process. A review of the plan will take place at a meeting of the Hazard Mitigation Planning Committee every year on the first Tuesday in October. Section 8 discusses when a special meeting may be called to review the plan, and how the public will be notified of these meetings. Each jurisdiction is assigned the task of reviewing the implementation of mitigation measures in its own jurisdiction.

SECTION 3: FEDERAL REQUIREMENTS

Public Laws

Title 44, Section 201.6 in the US Code of Federal Regulations explains the requirements of local mitigation plans. The Etowah County Multi-Jurisdictional Hazard Mitigation Plan will follow these requirements. They are as follows (Mitigation Planning, 2011):

§ 201.6 Local Mitigation Plans.

The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding. **(a) Plan requirements.**

(1) A local government must have a mitigation plan approved pursuant to this section in order to receive HMGP project grants. The Administrator may, at his discretion, require a local mitigation plan for the Repetitive Flood Claims Program. A local government must have a mitigation plan approved pursuant to this section in order to apply for and receive mitigation project grants under all other mitigation grant programs.

(2) Plans prepared for the FMA program, described at part [79 of this chapter](#), need only address these requirements as they relate to flood hazards in order to be eligible for FMA project grants. However, these plans must be clearly identified as being flood mitigation plans, and they will not meet the eligibility criteria for other mitigation grant programs, unless flooding is the only natural hazard the jurisdiction faces.

(3) Regional Administrator's may grant an exception to the plan requirement in extraordinary circumstances, such as in a small and impoverished community, when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

(4) Multi-jurisdictional plans (*e.g.* watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan. State-wide plans will not be accepted as multi-jurisdictional plans.

(b) Planning process. An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

(c) **Plan content.** The plan shall include the following:

(1) Documentation of the *planning process* used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

(2) A *risk assessment* that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:

(i) A description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

(ii) A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:

(A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B) An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate;

(C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

(iii) For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

(3) A *mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. This section shall include:

(i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

(ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

(iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

(4) A *plan maintenance process* that includes:

(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

(iii) Discussion on how the community will continue public participation in the plan maintenance process.

(5) *Documentation* that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

(d) *Plan review.*

(1) Plans must be submitted to the State Hazard Mitigation Officer (SHMO) for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. Where the State point of contact for the FMA program is different from the SHMO, the SHMO will be responsible for coordinating the local plan reviews between the FMA point of contact and FEMA.

(2) The Regional review will be completed within 45 days after receipt from the State, whenever possible.

(3) A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

(4) Managing States that have been approved under the criteria established by FEMA pursuant to [42 U.S.C. 5170c\(c\)](#) will be delegated approval authority for local mitigation plans, and the review will be based on the criteria in this part. Managing States will review the plans within 45 days of receipt of the plans, whenever possible, and provide a copy of the approved plans to the Regional Office.

SECTION 4: PLAN APPROVAL AND ADOPTION

Background

Section 38-33 of the City Code of the City of Gadsden gives the Gadsden/Etowah County Emergency Management Agency the power and duty to prepare and recommend ordinances necessary to mitigate or deter emergencies or disasters for the City of Gadsden. The Gadsden/Etowah County Emergency Management Agency has traditionally developed this plan on a countywide basis for all jurisdictions in the county. Input from each jurisdiction's local government is used in the process.

Jurisdictions within Etowah County will be afforded an opportunity to participate in the planning process. The following jurisdictions and organizations have been identified as stakeholders:

- Altoona, Town of: Tim Crow, Altoona Fire Chief
- American Red Cross: Josh Tanner, Disaster Services Specialist
- Attalla, City of: Jason Nicholson, Attalla Engineer
- Blount County Emergency Management Agency: Don Roybal, Director
- Calhoun County Emergency Management Agency: Jonathan Gaddy, Director
- The Chamber of Gadsden/Etowah County: Heather New, President
- Cherokee County Emergency Management Agency: Beverly Daniel, Director
- DeKalb County Emergency Management Agency: J. Anthony Clifton, Director
- Etowah County: Tim Graves, Engineer
- Etowah County VOAD: Craig Scott, Chairperson
- Gadsden, City of: Mike Hilton, Street Maintenance Supervisor
- Gadsden/Etowah County Emergency Management Agency: David Heflin, PIO
- Gadsden/Etowah County Emergency Management Agency: Deborah Gaither, Director
- Gadsden/Etowah County Emergency Management Agency: Michael Amberson, Planner
- Glencoe, City of: Walter Burns, Code Official
- Hokes Bluff, City of: Scott Reeves, City Council
- Marshall County Emergency Management Agency: Anita McBurnett
- Rainbow City, City of: Heath Williamson, Engineer
- Reece City, Town of: Larry Sitz, Mayor
- Ridgeville, Town of: Jerome Anderson, Mayor
- Sardis City, Town of: Doug Gamblin, City Clerk
- Southside, City of: Belinda Childress, Police Administrative Assistant
- St. Clair County Emergency Management Agency: Ellen Tanner, Director
- Walnut Grove, Town of: Randall Green, Water Department Manager

Each jurisdiction's goals and actions are based on a consensus of the group, and on past goals and actions. Each jurisdiction was given a copy of its previous goals and actions, and asked to review and comment. Finally, each jurisdiction has been directed to review the draft version of the plan on the Gadsden/Etowah County Emergency Management Agency website (www.gecema.com) and comment. Once the Gadsden/Etowah County EMA receives an

Approvable Pending Adoption letter from FEMA, adoption of the plan will take place in each jurisdiction.

After a draft of the plan is completed, it will be made available to stakeholders (local governments, businesses, non-governmental organizations, the public, and neighboring counties) for review and comments. A copy of the draft will be posted on the Gadsden/Etowah County Emergency Management Agency website (www.GECEMA.com). Review and comments will be encouraged via local media, social media, and a public information campaign. A draft copy will be sent to the State Hazard Mitigation Officer (SHMO) for review by the Alabama Emergency Management Agency, and ultimately FEMA. Once review and changes (if needed) have been completed, the plan will be approved by the Hazard Mitigation Planning Committee. Following this approval, it will be sent to each municipality and the Etowah County Commission for adoption. Following adoption, the plan will be sent to the SHMO for final approval.

SECTION 5: THE PLANNING PROCESS

Purpose

The purpose of the Etowah County Multi-Hazard Mitigation Plan is to identify community policies, actions, and tools for implementation over the long term that will result in the reduction of risk and potential for future community losses. This is accomplished by using a systematic process in learning about the hazards that can affect Etowah County, setting clear goals, identifying appropriate actions, following through with an effective mitigation strategy, and keeping the plan current.

Scope

The Etowah County Multi-Hazard Mitigation Plan is relevant for all jurisdictions and unincorporated areas within the geographic boundaries of Etowah County. This includes the following local governments:

- City of Attalla
- City of Boaz
- City of Gadsden
- City of Glencoe
- City of Hokes Bluff
- City of Rainbow City
- City of Southside
- Etowah County (including unincorporated areas)
- Town of Altoona
- Town of Reece City
- Town of Ridgeville
- Town of Walnut Grove

ASSESSING COMMUNITY SUPPORT

Procedures and Techniques

Determine the Planning Area

This plan will take an entire county approach for the planning area. It will incorporate all eleven of the county's municipalities and the county government, including the unincorporated areas. The reasons for this approach are to create partnerships, better address issues which cross jurisdictional boundaries, and to encourage the pooling of resources.

Determine if the Community is Ready to Begin the Planning Process

The goal of this section is to promote the community's knowledge, support, and resources for mitigation planning. Information from this section should be combined with the hazard and vulnerability information to shape the projects and policies adopted in the mitigation plan.

Knowledge

Work should be done to show the value of mitigation to the community. An independent study by the Multihazard Mitigation Council found that mitigation efforts, funded by the Federal Emergency Management Agency (FEMA), were cost-effective and reduced future losses from earthquakes, wind, and flood events; and resulted in significant net benefits to society as a whole (individuals, states, and communities) in terms of future reduced losses. To quantify this, the Multihazard Mitigation Council conducted analysis of FEMA grant data and found that for every dollar spent on mitigation, society saved an average of \$4 (Multihazard Mitigation Council, 2005).

The following questions should be asked with regards to the community's knowledge of hazard mitigation:

1. How much do elected and appointed officials know and understand about hazards in the community? Do they know what they and the community can do to reduce their effects? Has there been a recent disaster?
2. How much do the citizens know about hazards in the community?
3. Do officials and citizens understand that their actions, behavior, and decisions affect their vulnerability and that steps can be taken to reduce risk?
4. Is there a difference between risk perceived by the community and the actual risk?

Support

Work should be done to educate local government officials, citizens, and the private sector on how they can support mitigation in the community. The following questions should be asked with regards to the community's support of hazard mitigation:

1. Do elected and appointed officials understand how local, state, and federal levels each support hazard mitigation and emergency management?
2. Is there something that citizens are dissatisfied with that may be located in a hazard area that could be dealt with in context of mitigation planning? How can the mitigation plan contribute to other planning initiatives?
3. How likely is it that there will be an individual to serve as a champion to provide leadership and/or support for mitigation planning?

4. Is there an existing hazard mitigation plan?
5. Is there an existing system for planning in the community? Is there a planning department? A community plan? Is there local staff with planning capabilities that could collaborate on the plan?
6. Is there a history of community interest and/or involvement in environmental issues? Recreational issues? Safety issues?
7. Is there an existing land use map, Geographic Information Systems (GIS), contour map, soils map, topographic map, or other material that can be used to better understand the hazards context of the community?

Resources

The following questions should be asked with regards to resources for hazard mitigation:

1. What is the range of non-FEMA or non-mitigation programs available to assist in mitigation projects?
2. What are the major employers, industries, and organizations that help shape the culture of the community? Are they willing to be involved?

Remove Roadblocks

Mitigation planning roadblocks related to knowledge, support, and planning resources, such as lack of interest and limited funding must be overcome to make a successful plan. The following tasks are useful in overcoming these roadblocks:

- Educate public officials about the benefits of reducing potential losses through pre-disaster mitigation planning and about the costs of not planning for mitigation.
- Identify leaders in other communities who were successful in developing and/or implementing mitigation plans.
- Identify a person in a position of authority to help convince elected officials and others to support the planning effort.
- Capitalize on regulations which require local communities to have approved plans to be eligible for post-disaster mitigation funding.
- Identify existing processes, such as a comprehensive community plan, that can be expanded to include the development of a mitigation plan.
- Identify self-interests in mitigation for a variety of sectors of the community to obtain broad support.
- Identify a variety of potential funding and technical resources to support the planning process and be ready to provide this information to others.

Knowledge

Educate public officials on hazards and risks in the community.

Have statistics ready about previous disasters, including number of households damaged or destroyed and the number of businesses that were closed. Be prepared to familiarize public officials hazard mitigation planning and the mitigation process. It should be emphasized how mitigation will help elected officials achieve safety and economic well-being goals of their constituents. Provide as much information on the possible costs of a disaster and how mitigation

can help reduce those costs to individuals, businesses, and communities following a disaster. Provide success stories of nearby communities.

Be prepared to engage the public to advocate for mitigation planning. It should be stressed that the plan's goals, objectives, and strategies will be determined with the public's interests and support. Be inclusive regarding details of the mitigation options without going into too much detail. The following are the six broad categories of mitigation measures:

1. **Prevention.** Measures such as planning and zoning, open space preservation, land development regulations, building codes, storm water management, fire fuel reduction, soil erosion, and sediment control are included in this category.
2. **Property Protection.** Measures such as acquisition, relocation, storm shutters, rebuilding, barriers, floodproofing, insurance, and structure retrofits for high winds and earthquakes are included in this category.
3. **Public Education and Awareness.** Measures such as outreach projects, real estate disclosure, hazard information centers, technical assistance, and school age and adult education programs are included in this category.
4. **Natural Resource Protection.** Measures such as erosion and sediment control, stream corridor protection, vegetative management, and wetlands preservation are included in this category.
5. **Emergency Services.** Measures such as hazard threat recognition, hazard warning systems, emergency response, protection of critical facilities, and health and safety maintenance are included in this category.
6. **Structural Projects.** Measures such as dams, levees, seawalls, bulkheads, revetments, high flow diversions, spillways, buttresses, debris basins, retaining walls, channel modifications, storm sewers, and retrofitted buildings and elevated roadways are included in this category.

Tout the benefits of hazard mitigation and mitigation planning.

Hazard mitigation planning is the systematic process of learning about the hazards that can affect a community; setting clear goals; and identifying and implementing policies, programs, and actions that reduce the effects of losses from future disasters. Mitigation planning contributes to sustainable communities. An essential characteristic of sustainable communities is its resilience to disasters. The mitigation planning process can support a more robust and sustainable planning effort by assuring that land use planning and development regulations guide development in directions that facilitate many goals simultaneously.

Communities that have up-to-date mitigation plans are better able to identify and articulate their needs to state and federal officials when funding becomes available, particularly after a disaster. Such communities can present projects as an integral part of an overall, agreed-upon strategy, rather than as projects that exist in isolation. Having established priorities ahead of time will make the community better able to identify technical and financial resources outside the traditional venues. Equally important are requirements by the federal government related to

mitigation planning and grants. For example, only communities with approved plans that meet Disaster Mitigation Act of 2000 criteria will be eligible to receive Hazard Mitigation Grant Program funds following a Presidentially Declared Disaster.

Support for Planning

Mitigation requires collaboration between and support from local governments, the state government, the federal government, the private sector, citizens, academic institutions, and other non-governmental organizations.

Support from the Local Government

Local governments are responsible for enacting and/or enforcing zoning ordinances, land use plans, building codes, and other measures to protect life and property. Local governments are also responsible for informing citizens of the risks hazards pose to people, property, and the environment, and measures they can take to reduce losses from such risks. Local governments are responsible for addressing hazard threats within the community and for following a sound planning process for identifying and selecting the best solution for the community. Local governments are responsible for ensuring that each citizen has an opportunity to provide input into the development of local mitigation projects and activities.

Support from the State Government

States administer programs that provide assistance for mitigation initiatives and act as the liaison between federal and local governments for all phases of emergency management. The State Hazard Mitigation Officer (SHMO) serves as the point of contact and coordinates all matters relating to hazard mitigation planning and implementation. States ensure that local governments uphold federal regulations intended to reduce losses due to hazards. States may also provide technical and/or financial resources to their local governments to achieve common mitigation goals. States continually evaluate their own facilities and resource capabilities and produce and maintain statewide mitigation plans based on their own priorities, and on local needs and priorities. States may also educate and inform local governments, businesses, and citizens about the hazards and risks within the state, and may assist them in developing plans to reduce the risk.

Support from the Federal Government

FEMA is the lead federal agency responsible for providing technical and financial assistance to state and local governments for disaster mitigation planning and the implementation of mitigation projects. FEMA promotes mitigation activities and programs among federal, state, and local governments, as well as academic institutions and non-governmental organizations. FEMA is given the authority to implement the Disaster Mitigation Act of 2000.

Support from the Private Sector

More than 25% of businesses never reopen after a disaster. Even if a business is not physically damaged during a disaster, it cannot operate if employees cannot get to work, if water and electricity is unavailable, or if customer fear safety hazards. Given the private sector is the backbone of the local economy, it is vitally important to collaborate with them in mitigation planning.

Citizen Support

It is important for citizens to find out about local hazards and identify measures they can take to reduce the impact on their homes and families. Economic viability of the community is also very

important to citizens. Input from citizens can help shape the plan appropriately and provide support in motivating others to get behind mitigation measures.

Support from Academic Institutions

Academic institutions are often unfamiliar with hazards that can affect their facilities and have not identified measures that can be taken to reduce their impact. Local governments should work with these academic institutions to make them aware of this issue. In additions, academic institutions can provide resources to the planning effort, such as technical expertise, facilities to host meetings, post-disaster services and facilities, and student resources to assist in data gathering.

Support from a Champion

Having a prominent and well-respected community business leader, elected official, or agency head advocate for the initiation of mitigation planning will help enlist the support of other officials and community leaders. This can also increase the “human” aspect of loss reduction by associating it with a recognizable personality.

Capitalize on New Regulations

The Disaster Mitigation Act of 2000 and its implementing regulations provide significant opportunities for local governments to strengthen mitigation efforts through planning. This act emphasizes integrating mitigation planning with other efforts. Integrating mitigation planning with other efforts provides the opportunity to draw from other plans, which enables hazard reduction goals, objectives, and actions to align with other community goals, values, and policies.

Create Support by Expanding Current Planning Initiatives to Include Mitigation Concepts, Policies, and Activities

Comprehensive and other community-oriented planning activities

As comprehensive plans are reviewed and updated, and after mitigation strategies are developed, mitigation policies and activities should be incorporated into elements of the plan such as economic development, transportation, recreation, historic preservation, and housing. Planning for future land uses by considering hazard constraints and opportunities, addressing environmental concerns, and incorporating hazard reduction into capital improvements and infrastructure elements are all potential mitigation opportunities. Other special purpose community plans that can help support mitigation planning include stormwater management plans, open space and recreation plans, redevelopment and housing plans, and transportation plans.

Capital improvement plans

Local governments and private organizations of any size have capital improvement plans for building new facilities and replacing inadequate facilities. These plans could incorporate mitigation principles into planned projects such as locating new public buildings out of high hazard areas or sizing adequate culverts to accommodate floodwaters. These plans could also include provisions for upgrading replacement facilities using the latest mitigation techniques.

Floodplain remapping or updating

New Flood Insurance Rate Maps (FIRMs) are an important impetus to either revise existing mitigation and floodplain management plans or to create a new mitigation plan to address flood hazards.

Existing mitigation and other emergency management plans

Changes in the nature or threats of local hazards and in the improved understanding of hazard mitigation techniques will require an update of the local mitigation plan. The Disaster Mitigation Act of 2000 requires the mitigation plan be updated, approved, and adopted every five years. Mitigation considerations should be incorporated into the local Emergency Operations Plan.

Post-disaster recovery planning

Officials face extraordinary pressure to immediately rebuild disaster-affected areas back to pre-disaster conditions, eliminating the possibility of mitigation. A mitigation plan that addresses post-disaster issues before the event could help take some of the pressure off elected officials, and would provide a publicly supported reason for a more sustainable redevelopment effort.

Support from Other Programs

The National Flood Insurance Program (NFIP)

The NFIP offers federally-backed flood insurance to help reduce disaster losses from flooding. It provides flood insurance to property owners for structures that would otherwise be uninsurable because of their susceptibility to flooding, in exchange for communities adopting and implementing floodplain management regulation to minimize flood losses to new construction.

Community Rating System (CRS)

The CRS is a program under the NFIP that recognizes and encourages community floodplain management activities that exceed minimum NFIP standards. The CRS recognizes community efforts beyond NFIP standards by reducing flood insurance premiums from 5% to 45% for the community's property owners, depending on the amount of public information and floodplain activities that the community undertakes. Communities receive credit under CRS for developing a flood mitigation plan. As of May, 2014, Etowah County was not a CRS community. The City of Birmingham (20% discount) and the City of Pell City (10% discount) are nearby communities that are CRS eligible. The local planning team should get input and guidance from them on what they did to be CRS eligible.

Flood Mitigation Assistance Program (FMA)

The FMA is a program under the NFIP that provides funding for communities for the preparation of mitigation plans and for flood mitigation projects.

Residential or non-residential properties currently insured with the NFIP are eligible to receive FMA funds. In order to receive an increased Federal cost share, properties must meet one of the definitions below (consistent with the legislative changes made in the Biggert-Waters Flood Insurance Reform Act of 2012):

A severe repetitive loss property is a structure that:

- Is covered under a contract for flood insurance made available under the NFIP; and
- Has incurred flood related damage –

- For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or
- For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

A repetitive loss property is a structure covered by a contract for flood insurance made available under the NFIP that:

- Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
- At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

Pre-Disaster Mitigation Program (PDM)

The PDM provides for pre-disaster funding of mitigation planning and projects on a competitive basis.

Planning Resources

Technical Resources

Technical resources for mitigation planning includes professional advice on matters related to economics, science, engineering, mapping and planning, procedural information, and data necessary to complete risk assessments or make project decisions. Technical expertise can be found in planning departments, engineering departments, GIS, local universities and colleges, and regional planning associations. The State also has resources such as the State Geologist, State Climatologist, and the State Hurricane Program Manager which could be helpful. These resources are often needed to gather enough information to make determinations as to project types and priorities.

Financial Resources

The Federal Government makes provides mitigation funding through pre-disaster and post disaster programs. Pre disaster programs include:

The Pre-Disaster Mitigation Program (PDM)

The PDM provides funding to states, communities, and tribes for cost-effective hazard mitigation planning activities that complement a comprehensive mitigation program and reduce injuries, loss of life, and damage of property before a disaster strikes.

The Flood Mitigation Assistance Program (FMA)

The FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other insurable structures. The three types of grants available through FMA are planning, project, and technical assistance grants. Planning grants can be used by states and communities to prepare flood mitigation plans, with a focus on repetitive loss properties.

Post-disaster programs include:

The Hazard Mitigation Grant Program (HMGP)

The HMGP provides grants to state, local, and tribal governments of up to 15% of the total FEMA disaster funds received (public and private) following a Presidentially Declared Disaster. These funds are used to implement long-term hazard mitigation programs.

The Assistance to Individuals and Households Grant Program

The Assistance to Individuals and Households Grant Program authorizes grants to be used for mitigation measures to cover serious unmet, disaster-related property losses.

The Public Assistance Program (PA)

The PA provides funding for the repair, restoration, or replacement of damaged facilities belonging to governments, and to private nonprofit entities, and to other associated expenses, including emergency protective measures following a Presidentially Declared Disaster. Mitigation measures related to the repair of damaged public facilities can be covered using PA.

In addition to FEMA funding programs, funds should be sought from community, state, and other federal programs with missions related to the type of mitigation activity being pursued.

Human Resources

Private citizens, employers, industries, and organizations can provide the staff and expertise necessary to conduct a meaningful planning process. Private sector participation can also lead to financial and in-kind resources. Citizens with expertise in areas such as survey techniques, fundraising, public relations, and other technical subjects can be valuable to the planning team.

BUILD THE PLANNING TEAM

The planning team should consist of community leaders, representatives of local government agencies, business owners and operators, interested citizens, and anyone else who has an interest in reducing hazards in the community.

Procedures & Techniques

Create the Planning Team

The planning team should be built on existing organizations and boards whenever possible. The planning team will welcome anyone who is available to participate regularly in the meetings. Smaller subgroups can be formed later in the process to tackle specific issues.

Select a committee chair

An experienced chair will understand how to navigate issues related to team momentum, conflict, team composition, and schedules for completing tasks.

Determine your stakeholders

Stakeholders are individuals or groups that will be affected in any way by a mitigation action or policy and include businesses, private organizations, and citizens. Brainstorming with the planning team is a good way to bring light candidates that may have been missed earlier. The following questions should be discussed with the planning team to see what kinds of candidates are identified:

- Who are the representatives of those most likely to be affected?
- Who might be responsible for what is intended?

- Who is likely to mobilize in support of the mitigation planning process? Who may mobilize against it?
- Who can make the planning process more effective through their participation or less effective by their nonparticipation or outright opposition?
- Who are the voiceless for whom special efforts may have to be made?
- Who can contribute financial or technical resources?

Include stakeholder representation from important groups.

Neighborhood groups and other non-profit organizations and associations should be included. These include neighborhood associations, housing organizations, watershed associations and other environmental groups, historical preservation groups, parent-teacher organizations, church organizations, and the local American Red Cross. These entities act as advocates for citizens and can be essential in garnering support and local buy-in from citizens.

State, regional, and local governmental organizations should also be included. These organizations can provide expertise and guidance on statutes and programs that can provide local grants. Local agency representatives from public works, recreation, fire, or public safety can provide the team with valuable technical expertise. Representatives from neighboring communities should also be included. Key state representatives include the SHMO, NFIP coordinator, State Geologist, and State Climatologist.

Obtain Official Recognition for the Planning Team

The planning team should consider obtaining official recognition in the form of a council or commission resolution, a proclamation, a Memorandum of Agreement (MOA) or a Memorandum of Understanding (MOU).

Organize the Team

Kickoff meeting

Once potential candidates have been identified, it is important to convene the group to enlist their participation and educate them about hazard mitigation planning. The first meeting should focus on creating a mood for learning rather than jumping directly into problem solving. It should be relaxed, friendly, and brief. It should focus on an introduction of the team members, what the meeting is for, and what the team wants to accomplish. It should include a discussion of roles and responsibilities, decision-making processes, conflict resolution strategies, administrative procedures, financial management, and communications strategies. A representative from the Alabama Emergency Management Agency will be requested to provide an overview of mitigation planning and the Disaster Mitigation Act of 2000.

Over the course of the next few meetings, it will be helpful for the team to create a chart of the planning process that includes a timeline. This chart should describe who is responsible for what and when; what each member's roles are; and how each party's contribution is related to the overall process. The chart should be continually updated.

Before the kickoff meeting, the leader should determine the local procedural requirements for these meetings. This will concern whether these meetings are open or closed meetings. It should also be determined if minutes and records must be available to the public.

An agenda will be developed and sent to members before the meeting detailing the meeting's discussion points. At the meeting, a chair, facilitator, and secretary will be designated. A designated team member will begin gathering data and information regarding available resources, data of the most recent disasters, and damage estimates from the most recent disasters.

The following rules will apply and be posted at the meeting:

- Everyone is expected to participate fully;
- All input is honored;
- Keep personal agendas outside of the team;
- One colleague speaks at a time;
- Be honest and speak what is on your mind;
- No one is ridiculed or made to feel unimportant;
- Look for connections;
- Trust the process.

Develop a mission statement

The mission statement is about the plan's purpose and supports a vision statement, which is where the community wants to be in the future as an outcome of the mission. The mission statement will help build a common understanding of the purpose of the plan. This is the first step towards developing goals to guide the team in accomplishing the mission. Subsequently, the team will develop objectives and activities to support the goals.

The central theme of the mission statement will acknowledge that a specific problem exists and that there are ways to solve it. The mission statement should answer the following questions:

- Why is the plan being developed?
- What does the plan do?
- For whom or where does the plan apply?
- How does the plan do this?

Establish responsibilities

Each planning team member should have a clear understanding of what is expected of them as a member of the team, and what they can expect from the team and the planning process. They should also have an idea of how much time they will need to dedicate from the initiative. Team members should have answers to the following questions:

- What do you see as your role and responsibility in this initiative?
- To be successful, what do you need from the rest of the team?
- To be successful, what do you need to give to the team in return?
- How do you see the plan contributing to the betterment of the community?
- What specific things will this committee do to ensure such an outcome?

Assign key roles and provide job descriptions to team members

Team member assignments should be broad and accommodate future growth of the team. The types of roles will include:

- Developing public education;
- Public outreach to special interest groups;
- Technical assistance from agencies or departments that are involved;

- Meeting location planning;
- Meeting documentation – This person should keep a record of all meeting minutes, voting and attendance records, resolution of the team, open public meetings, and research work summaries. The designated member will also be in charge of posting notices for meetings and press releases. Minutes should be provided to each member of the partnership.

Establish a regular meeting schedule

During the initial meeting, the team will decide upon a meeting schedule. The secretary will create a calendar of meeting dates, times, and locations to be sent to all members. The meeting facilitator will set goals for each meeting and share these goals with the group. Team members will be encouraged to submit future agenda requests that outline what needs to be addressed.

Workgroups and subcommittees

Workgroups and subcommittees may be formed and meet independently of the full planning team to focus on one central issue. These groups, if formed, will provide the leadership, research, and plan-writing responsibilities for the issues. Workgroups or subcommittees may be formed for:

- Risk assessment;
- Infrastructure;
- Critical facilities;
- Land use planning and zoning;
- Businesses.

Engage the Public

Identify the Public

The focus on this step will be to educate the public. The planning team will review the list of stakeholders who did not participate in the planning process. Special attention should be focused on stakeholders who were not involved in planning, but who can be impacted by hazards.

Organize Public Participation Activities

Schedule public participation activities

The planning team will identify points in the planning process where it is important to inform the public of what is happening and to seek their input to assist in decision making. Two key times to involve the public are at the beginning of the process and after the risk assessment. When a draft of the plan is complete, the public will be allowed to review it and provide comments before it is presented for adoption. Public participation activities to be considered include:

- Hosting a public workshop;
- Establishing a website or social media site;
- Conducting interviews;
- Distributing questionnaires (see Annex C).

Stakeholders should be made aware that while their suggestions are welcomed, they will not always be acted upon. A planning team member will be responsible for being the central contact for public feedback. This person will also be in charge of organizing the feedback that is

received from stakeholders. A process will be developed by this team member to organizing and storing the comments that are received.

Document results

After each public participation activity, results should be documented so that they can be referred to later. The planning team will use the public comments for consideration during the formation of the mitigation plan. This documentation will serve as a permanent record that public feedback was included in the planning process.

Develop a Public Education Campaign

A public education campaign will be developed to make stakeholder aware of local hazards and mitigation. A primary person will be identified as the Public Information Officer (PIO). During the public education campaign, this person will identify organizations which may be strong supporters of the program. The PIO will seek to obtain endorsement letters on the planning team's behalf from leaders of these organizations. The following may be considered when creating a public education campaign:

News media

The planning team may consider including a special insert in the local paper. Public meetings may be broadcasted on local access channels. Public service announcements (PSA) may be created to air on local radio or television stations to highlight hazards and mitigation.

The PIO will create a press kit summarizing key information that includes goals and actions. This will be distributed to local media. The PIO will also issue press releases highlighting key points regarding the mitigation goals and actions. The PIO will also contact local publications and newsletters to ask them to include information about the planning process in their information.

Brochures and fliers

The PIO will create a brochures and fliers that include information about the planning committee and what the mitigation plan is expected to accomplish in the community. These publications should be reviewed by the planning team before the information is released to the public. The brochures and fliers should include a contact number for more information. These brochures and fliers can be distributed through utility bills, grocery or department stores, government buildings, and libraries throughout the community.

Outreach activities at festivals or fairs

The PIO will ask organizers of festivals and fairs to consider allowing an area to display hazard and mitigation related information for the public to take. During these events, members of the planning team can talk to citizens about their experiences with hazards and get feedback on any mitigation activities being considered. The PIO will be responsible for keeping track of the dates and locations of these events.

Planning Meetings

Meeting #1

The Hazard Mitigation Planning Committee met for the first time on September 25, 2014. The meeting was held at the Gadsden-Etowah Chamber of Commerce. It began at 10 a.m. The meeting was focused on briefing the team on the process. This was done via Power Point by addressing issues in a “Who, What, When, Where, How, and Why” format.

Valerie Wallace from the Alabama Emergency Management Agency briefed the committee on Hazard Mitigation Assistance programs which are available. She also talked about the upcoming Hazard Mitigation Grant Program (HMGP) for Presidentially Declared Disaster – 4176. She noted that for any projects which were not in the current mitigation plan, the local jurisdiction must pass a resolution adding this as a mitigation project for the current plan to be eligible for HMGP funding for that project.

The committee was given a draft copy of the future mitigation plan for review. They were also given a copy of the proposed “Public Questionnaire” (Appendix C) and a “Hazards in Your Community Survey” (Appendix D). The committee was asked to review the Public Questionnaire and to fill out the Hazards in Your Community Survey. Both should be returned at Meeting #2.

The committee decided that Meeting #2 should be held on November 13th, 10 a.m., and the Rainbow City Council Chambers. With that, the meeting was closed.

In attendance was:

- ❖ Michael Amberson – Gadsden/Etowah County EMA
- ❖ Josh Mousseau – Gadsden/Etowah County EMA
- ❖ Belinda Childress – City of Southside Police Department
- ❖ Craig Scott – Gadsden Public Library/Etowah County VOAD
- ❖ Scott Reeves – Hokes Bluff City Council
- ❖ Brian Stovall – City of Gadsden Public Works
- ❖ Mike Hilton – City of Gadsden Public Works
- ❖ Heather New – The Chamber of Gadsden/Etowah County
- ❖ Jason Nicholson – City of Attalla Public Works
- ❖ Heath Williamsons – City of Rainbow City Engineering
- ❖ Tim Graves – Etowah County Engineering
- ❖ Mike Bryant – Gadsden/Etowah County EMA
- ❖ Valerie Wallace – Alabama EMA

Meeting #2

The Hazard Mitigation Planning Committee met on Thursday, November 18th, 10 a.m., at the Rainbow City Council Chambers. The meeting focused on conducting the risk assessment. The Hazards in Your Community Sheet was collected, and a discussion was held regarding the sheets. It was discussed that Winter Weather may not have been adequately addressed in previous plans, and that it should be addressed in this plan. A discussion of local resources for winter weather occurred, and it was agreed that communities in Etowah County make the best with what they have. Investing heavily in equipment that can be only used for winter weather made little sense, given its infrequency. However, it can be safely assumed that while winter

weather is a low probability event, it has high consequences due to our community's lack of resources and experience.

The next topic of discussion was on the public questionnaires regarding natural hazard preparedness. The EMA believes it can distribute the questionnaire free. Mike Hilton with Gadsden Public Works will distribute the questionnaire to his employees, which will give the committee data from a wide array of people. Michael Amberson will make modifications on the questionnaire to localize it. The questionnaire will be distributed to the municipalities, over the internet, and at outreach events.

EMA intern Joshua Mousseau presented a brief history of hazards in Etowah County. After a brief discussion on this, the committee decided to hold the next meeting on Thursday, January 22nd, 10 a.m., at the Gadsden/Etowah County EMA. With this, the meeting was adjourned. In attendance was:

- ❖ Michael Amberson, Gadsden/Etowah County EMA
- ❖ Joshua Mousseau, Gadsden/Etowah County EMA
- ❖ Heath Williamson, City of Rainbow City
- ❖ Jason Nicholson, City of Attalla
- ❖ Mike Hilton, City of Gadsden
- ❖ Denise Cooley, Gadsden/Etowah County EMA
- ❖ Tim Crow, Town of Altoona

Meeting #3

The Hazard Mitigation Planning Committee met for the third time on Thursday, January 22, 2015. The meeting was held at the Gadsden-Etowah Chamber of Commerce. It began at 10 a.m. The meeting was focused on briefing the team on the risk assessment and mitigation measures portion of the planning process.

The planning team first went over the results of the natural hazards public preparedness questionnaire. There were 152 responses on the questionnaire. The questionnaire was made available via a paper copy, and online at <https://docs.google.com/forms/d/1SpjVRTtv-pt6kb8YhHeEgX1swqYzR0sSggZncMOQ-U4/viewform?c=0&w=1> which was created free using Google Forms. About half of the responses came in via paper copy. These were entered into the online form individually to help analyze the data. The other half were entered online. What most stuck out regarding the public survey was:

- 56% of respondents indicated they had never experienced a natural disaster, even though most probably had. (Was this an awareness issue on the respondents' part, or a problem of how the question was posed?)
- Respondents identified household fires, severe windstorms, and tornadoes as the biggest natural hazard in the community.
- 44% of respondents said they had never received information about how to make their family and home safer from natural disasters.
- Respondents indicated the most trustworthy sources for natural hazard preparedness information were news media (35%) and American Red Cross (34%). Government agency was 24%.

- The sources which are most effective for people to receive natural disaster preparedness information according to the survey were: television news (58%), Facebook (47%), radio news (43%), and a website or blog (35%). Chamber of Commerce (7%), You Tube (7%), Twitter (8%), and newspaper ads (9%) were identified as being the least effective.
- Most people had indicated they had talked with their household about what to do in case of a natural disaster or emergency (62%).
- Most people have developed or are planning to develop an emergency household plan (70%).
- 73% of the respondents indicated they had not prepared an emergency supply kit, though 32% planned on doing so.
- 59% of respondents indicated they had no Cardio-Pulmonary Resuscitation training.
- The highest percentage of emergency preparedness items on hand were flashlights (72%), smoke detectors (65%), and batteries (64%).
- Most people indicated they would be willing to spend money on features that made their homes more disaster resistant (68%), though the majority of respondents did not know how much they would be willing to spend (34%).
- Age range for respondents was 15 to 81 years old.
- 77% of respondents reported that they owned their own home.

The main takeaways from this survey were that the public generally agreed with the planning team on the major hazards our community faces. The public needs better opportunities to get preparedness information in their hands, and why it is important for them to spend time on emergency preparedness. Government agencies should work closely with the media and the American Red Cross to get emergency preparedness information out.

The next order of business was to rank the hazards facing our community, and decide upon what the general steps are to mitigate the hazards. The planning team decided upon the hazards based on quantitative data from previous events, public input, and conversations with stakeholders. The ranking of hazards are as such:

Rank	Hazard	Mitigation Measures
1	Tornadoes	Community safe rooms, individual safe rooms, generators, weather radios, public education, communications equipment and outdoor warning sirens.
2	Severe Thunderstorms	Generators, weather radios, public education, communications equipment.
3	Floods	Drainage projects, equipment, property acquisition, generators, and public education.
4	Winter Storms	Equipment, generators, weather radios, and public education.
5	Household Fires	Smoke detectors and public education.
6	Landslides and Sinkholes	Erosion control measures and equipment

The final meeting of the Etowah County Multi-Hazard Mitigation Planning team will take place on Thursday, March 26th, 10 a.m., at the EMA. With this, the meeting was dismissed.

In attendance was:

- ❖ Michael Amberson – Gadsden/Etowah County EMA
- ❖ Scott Reeves – Hokes Bluff City Council
- ❖ Jason Nicholson – City of Attalla Public Works
- ❖ Heath Williamsons – City of Rainbow City Engineering
- ❖ Tim Crow – Altoona Fire Department
- ❖ Josh Tanner – American Red Cross

Meeting #4

The Hazard Mitigation Planning Committee met for the final time in the planning phase on April 23, 2015 at the Gadsden/Etowah County Emergency Management Agency. A draft copy of the plan was distributed to the committee. An overview of the major sections of the plan was given. Committee members who were representing jurisdictions were asked to review Section 6 (Risk Assessment) and Section 7 (Mitigation Measures) to brief their community's elected officials. Michael Amberson will let each jurisdiction know when it is time to have the plan adopted by each agency.

A discussion was held regarding how the plan would benefit each jurisdiction. It was emphasized that the plan was a blueprint for how each community will lessen the impacts of hazards. The plan will also be used as justification for project funding. It will be especially important as a means of acquiring Federal funds.

In attendance was:

- ❖ Michael Amberson – Gadsden/Etowah County EMA
- ❖ David Heflin – Gadsden/Etowah County EMA
- ❖ Mike Hilton – Gadsden Public Works
- ❖ Tim Crow – Altoona Fire Department
- ❖ Scott Reeves – Hokes Bluff City Council
- ❖ Craig Scott – Etowah County VOAD/Gadsden Public Library
- ❖ Paulette Makary – Gadsden Public Library

SECTION 6: RISK ASSESSEMENT

Development Trends

Since the last revision of the Etowah County Multi-Jurisdictional Hazard Mitigation plan, development has risen slightly. Employment has steadily increased since 2010, as the area continues recovery from the 2008 recession. The largest employment sector in Etowah County is the Health and Education, which accounts for 20% of jobs. This sector has grown by 4.2% since 2010. Trade, Transportation, and Utilities is the second largest employment sector, accounting for 17.4% of jobs in Etowah County. Growth in this sector has been flat. Manufacturing, the third largest sector of jobs, accounts for 13.9%. This sector has grown by 6.1% since 2010.

Housing and population trends vary by jurisdiction. The table below describes these changes:

Population Trends				
Jurisdiction	2000	2010	Growth Rate (per year)	2020 (estimate based on trend)
Altoona	984	933	-5.18%	885
Attalla	6592	6048	-8.25%	5549
Etowah County	103,459	104,340	0.85%	105,229
Gadsden	38,978	36,856	-5.44%	34,850
Glencoe	5152	5160	0.16%	5168
Hokes Bluff	4149	4286	3.30%	4428
Rainbow City	8428	9602	13.93%	10,940
Reece City	634	653	3.00%	673
Ridgeville	158	112	-29.11%	79
Sardis City	1438	1704	18.50%	2019
Southside	7036	8412	19.56%	10,057
Walnut Grove	710	698	-1.69%	686

Housing Trends				
Jurisdiction	2000	2010	Growth Rate (per year)	2020 (estimate based on trend)
Altoona	437	452	3.43%	468
Attalla	2914	2749	-5.66%	2593
Etowah County	45,959	47,419	3.18%	48,925
Gadsden	18,797	18,285	-2.72%	17,787
Glencoe	2132	2225	4.36%	2322
Hokes Bluff	1721	2137	24.17%	2654
Rainbow City	3824	4280	11.92%	4790
Reece City	262	304	16.03%	353
Ridgeville	75	91	21.33%	110
Sardis City	597	694	16.25%	807
Southside	2783	3238	16.35%	3767
Walnut Grove	294	311	5.78%	329

Hazard Identification

The Hazard Mitigation Planning Committee reviewed the list of potential hazards to assess which are the most likely to impact Etowah County. Data is provided to the members of the committee regarding past events, dates, loss estimates, and magnitudes. In addition, data from organizations such as the National Oceanic and Atmospheric Association and the United States Geological Survey are used to help quantify the risk. Input from the public was also taken into account. Based on this input, tornadoes, severe thunderstorms, and winter storms were carried over as hazards from the 2010 plan. Lightning and hurricanes, while eliminated as an identified hazard category, are covered under tornadoes, severe thunderstorms, and flooding. Drought was eliminated from this plan as a major hazard. Household fires and landslides/sinkholes, which were not part of the 2010 plan, have been included in this plan.

One important source of information used to quantify the risks associated with hazards is the list of Presidential Disaster Declarations from the Federal Emergency Management Agency website. Below is a list of Major Disasters, Emergencies, and Fire Management Assistance Declarations for Etowah County:

Number	Declaration Date	State	Incident Description	Declaration Type
4176	5/2/2014	Alabama	Severe Storms, Tornadoes, Straight-line Winds, and Flooding	Major Disaster Declaration
1971	4/28/2011	Alabama	Severe Storms, Tornadoes, Straight-line Winds, and Flooding	Major Disaster Declaration
3319	4/27/2011	Alabama	Severe Storms, Tornadoes, and Straight-line Winds	Emergency Declaration
1797	9/26/2008	Alabama	Severe Storms and Flooding associated with Hurricane Ike	Major Disaster Declaration
3292	8/30/2008	Alabama	Hurricane Gustav	Emergency Declaration
3237	9/10/2005	Alabama	Hurricane Katrina Evacuation	Emergency Declaration
1549	9/15/2004	Alabama	Hurricane Ivan	Major Disaster Declaration
1466	5/12/2003	Alabama	Severe Storms, Tornadoes and Flooding	Major Disaster Declaration
1442	11/14/2002	Alabama	Severe Storms and Tornadoes	Major Disaster Declaration
1399	12/7/2001	Alabama	Severe Storms and Tornadoes	Major Disaster Declaration
2395	11/20/2001	Alabama	Northeast Alabama Fire Complex	Fire Management Assistance Declaration
1352	12/18/2000	Alabama	Tornadoes	Major Disaster

				Declaration
1104	2/23/1996	Alabama	Storms/Flooding	Major Disaster Declaration
1070	10/4/1995	Alabama	Hurricane Opal	Major Disaster Declaration
1013	3/3/1994	Alabama	Winter Storm, Severe Storm, Freezing, Flooding	Major Disaster Declaration
3096	3/15/1993	Alabama	Severe Snowfall, Winter Storm	Emergency Declaration
856	2/17/1990	Alabama	Flooding, Severe Storm, Tornado	Major Disaster Declaration
578	4/18/1979	Alabama	Storms, Wind, Flooding	Major Disaster Declaration
3045	7/20/1977	Alabama	Drought	Emergency Declaration
532	4/9/1977	Alabama	SEVERE STORMS, FLOODING	Major Disaster Declaration
422	4/4/1974	Alabama	TORNADOES	Major Disaster Declaration
388	5/29/1973	Alabama	SEVERE STORMS, FLOODING	Major Disaster Declaration
369	3/27/1973	Alabama	TORNADOES, FLOODING	Major Disaster Declaration

The basis for determination of the hazards to be dealt with in this plan was the nature of hazards in the county, the history of hazards in the county, and the probability of hazards in the county. This information is included with the profile of each hazard below. The list of hazards which will be dealt with this plan is as follows (in order from most likely and most severe to least likely and least severe):

1. Tornadoes
2. Severe Thunderstorms
3. Floods
4. Winter Storms
5. Household Fires
6. Landslides and Sinkholes

Tornadoes

Nature of Tornadoes in Etowah County

According to the Glossary of Meteorology, a tornado is *"a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud(American Meteorological Society 2013)."* Tornadoes form from thunderstorms with ground-based rotation. Tornado intensity is measured based on damage indicators using the Enhanced Fujita Scale (EF).

FIGURE 6.1 ENHANCED FUJITA SCALE

EF Rating	Wind Speeds	Expected Damage	
EF-0	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.	
EF-1	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.	
EF-2	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.	
EF-3	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.	
EF-4	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.	
EF-5	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.	

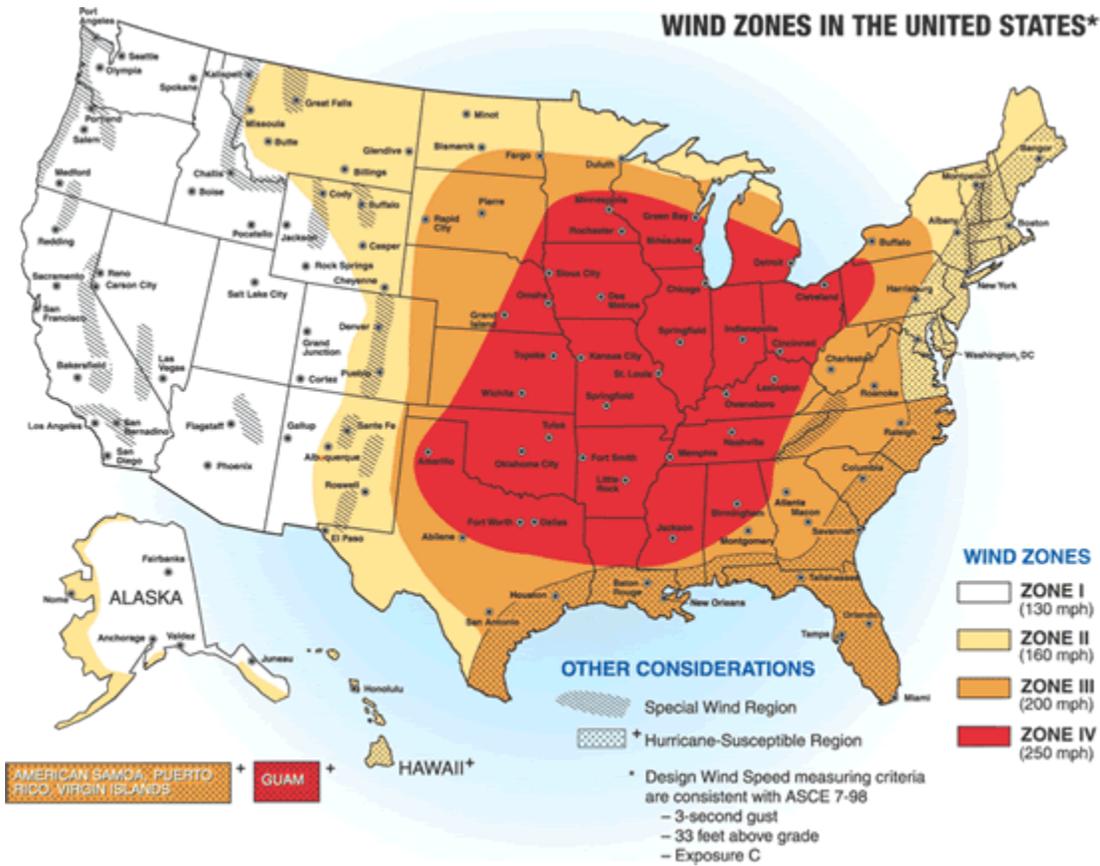
Most tornadoes in Alabama are weaker tornadoes (EF-0 to EF-1). However, Alabama has experienced several strong to violent tornadoes as well (EF-2 to EF-5). Violent tornadoes, while rare, account for the most tornado-related fatalities. According the FEMA, Etowah County lies in Wind Zone IV, which requires structures made to be wind resistant to be able to withstand a three second gust of 250 miles per hour. This is the highest rated wind zone in the country.

FIGURE 6.2 ALABAMA TORNADOES BY EF SCALE (AS OF DECEMBER 31, 2014)

	EF-0	EF-1	EF-2	EF-3	EF-4	EF-5	TOTAL
TOTAL	618	752	415	136	35	11	1967
% by EF scale	31.42%	38.23	21.10%	6.91%	1.78%	0.56%	

		%					
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FIGURE 6.3 WIND ZONES IN THE UNITED STATES



Tornadoes occur most frequently in Alabama between March and May, with a secondary peak in November. This aligns with peak severe weather season. However, tornadoes have occurred every month in Alabama. Land-falling tropical systems often create small tornadoes within spiral bands. The Atlantic hurricane season begins in June 1 and ends on November 30th.

Since 1950, tornadoes have occurred in every month in Etowah County with the exception of January, July, and October. April is by far the most prevalent month for tornado activity in the county. March, June, and November are second in tornado activity. While Etowah County’s tornado activity does not line up exactly with Alabama’s, the peak activity period is regarded as the same. Tornadoes, by nature, are rare and erratic. For example, the fact that Etowah County has experienced only one tornado in May since 1950, while Alabama has experienced 232 in the same time period is likely an anomaly and can be attributed to luck.

Tornadoes are a direct threat to life and property. They cause death and injury through flying debris and blunt force trauma. Tornadoes may produce widespread damage to homes, infrastructure, and vegetation. They may also damage the power infrastructure, rendering critical facilities, businesses, and homes without power for days or weeks.

FIGURE 6.4 ALABAMA TORNADOES BY MONTH

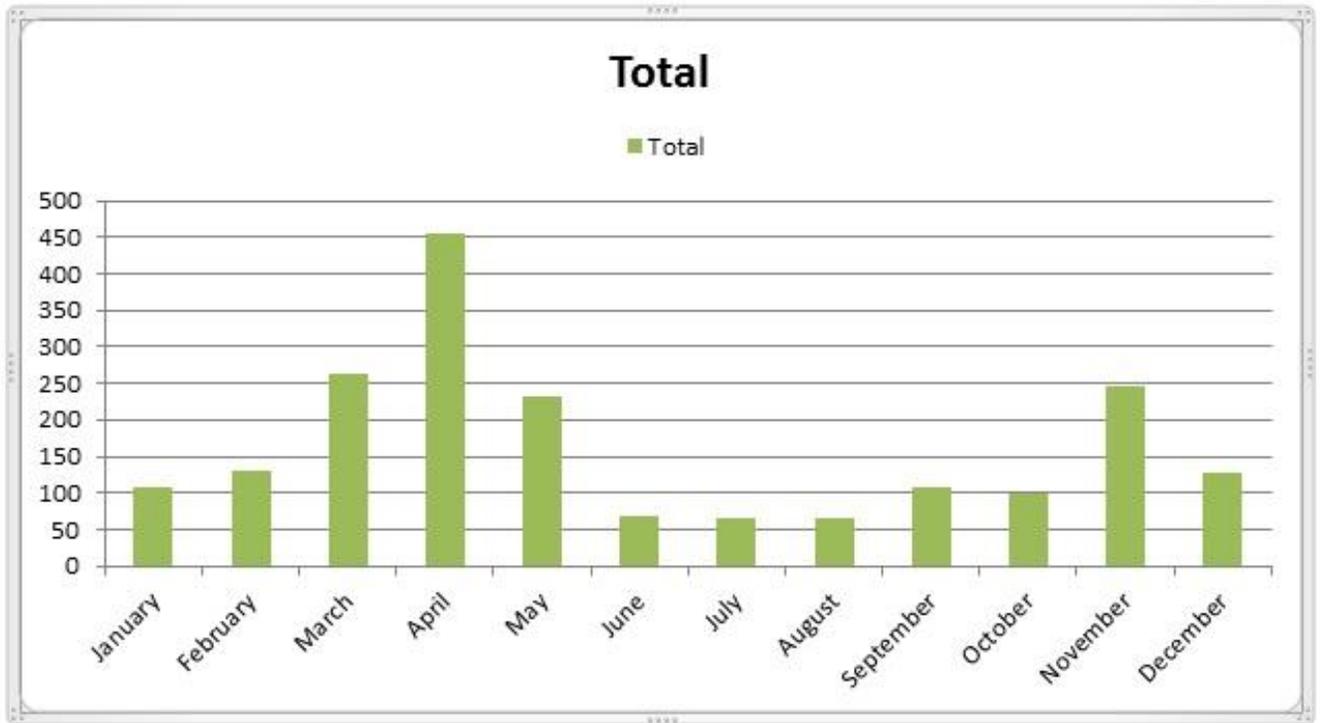
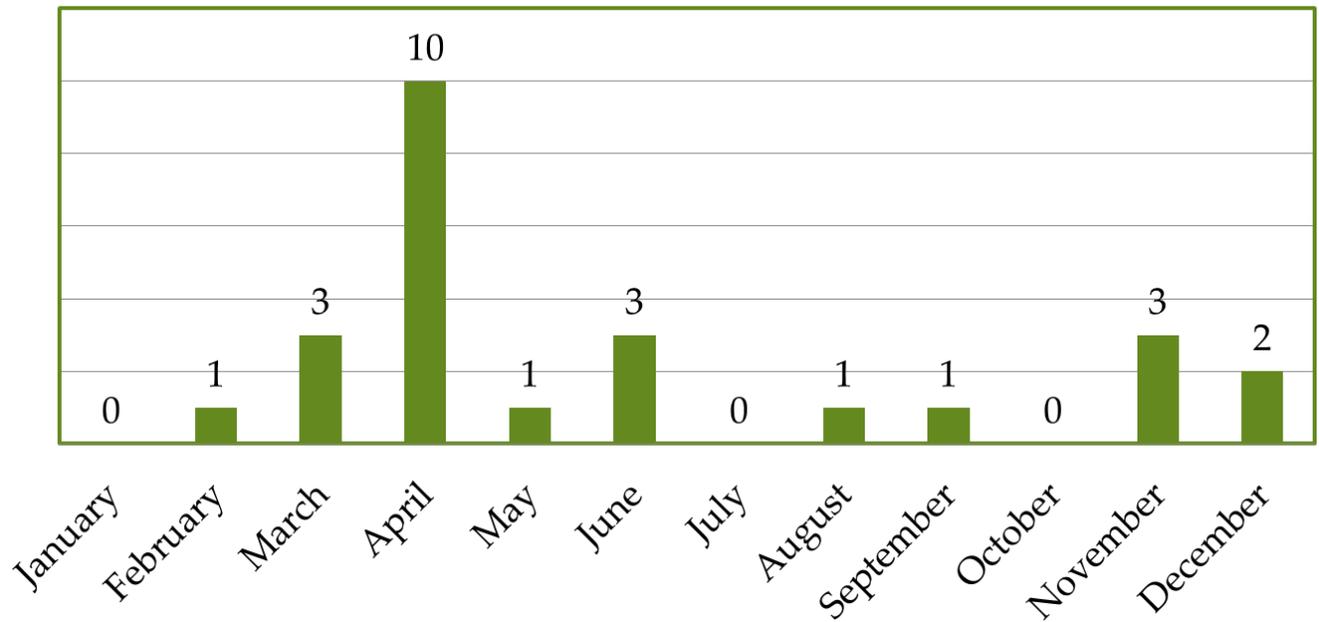


FIGURE 6.5 ETOWAH COUNTY TORNADOES BY MONTH

Tornadoes by Month in Etowah County 1950-2014



History of the Tornadoes in Etowah County

26 tornadoes were reported in Etowah County from April 29, 1958 through April 29, 2014. Six other are on record before 1958. Statistics from these events are not available, as records are much less thorough before 1958. There is no portion of the county that is not vulnerable to tornadoes. These 26 events have caused no deaths, 14 injuries, and approximately \$41.3 million in property and crop damages throughout Etowah County. All tornado events were measured utilizing the Fujita Scale (estimated before 1971). Property damages were adjusted to inflation for 2014.

Location	St.	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
ETOWAH CO.	AL	April 29, 1958	6:40	Tornado	F1	0	0	\$206,098.62	\$0.00
ETOWAH CO.	AL	December 30, 1969	13:45	Tornado	F2	0	2	\$1,622,956.40	\$0.00
ETOWAH CO.	AL	April 2, 1970	1:20	Tornado	F2	0	0	\$1,535,115.98	\$0.00
ETOWAH CO.	AL	June 15, 1971	13:15	Tornado	F1	0	0	\$14,706.79	\$0.00
ETOWAH CO.	AL	March 20, 1976	23:20	Tornado	F0	0	0	\$1,046,792.62	\$0.00
ETOWAH CO.	AL	April 4, 1977	14:30	Tornado	F2	0	4	\$982,879.54	\$0.00

ETOWAH CO.	AL	June 22, 1977	19:45	Tornado	F2	0	0	\$982,879.54	\$0.00
ETOWAH CO.	AL	April 27, 1980	0:05	Tornado	F2	0	0	\$72,284.59	\$0.00
ETOWAH CO.	AL	June 17, 1980	18:30	Tornado	F2	0	0	\$722,845.87	\$0.00
ETOWAH CO.	AL	June 16, 1983	15:10	Tornado	F1	0	1	\$598,017.07	\$0.00
ETOWAH CO.	AL	April 5, 1985	17:10	Tornado	F3	0	1	\$5,535,548.33	\$0.00
ETOWAH CO.	AL	August 16, 1985	16:09	Tornado	F0	0	0	\$66.43	\$0.00
ETOWAH CO.	AL	November 22, 1992	8:15	Tornado	F2	0	6	\$0.00	\$0.00
GALLANT	AL	April 16, 1998	20:46	Tornado	F1	0	0	\$102,315.95	\$58,466.26
REECE CITY	AL	April 16, 1998	21:01	Tornado	F1	0	0	\$43,849.69	\$43,849.69
SOUTHSIDE	AL	February 27, 1999	19:51	Tornado	F0	0	0	\$35,751.80	\$0.00
GADSDEN	AL	December 16, 2000	14:46	Tornado	F3	0	14	\$13,835,656.21	\$0.00
ALTOONA	AL	November 24, 2001	13:30	Tornado	F4	0	0	\$2,017,927.72	\$0.00
GALLANT	AL	November 10, 2002	22:31	Tornado	F1	0	0	\$5,297.39	\$1,324.35
TABOR	AL	March 19, 2003	13:57	Tornado	F0	0	0	\$0.00	\$2,589.67
HOKES BLUFF	AL	April 27, 2011	18:22	Tornado	EF1	0	0	\$9,956,254.81	\$0.00
RAINBOW CITY	AL	September 4, 2011	14:50	Tornado	EF0	0	0	\$31,775.28	\$0.00
SARDIS CITY	AL	March 18, 2013	14:43	Tornado	EF1	0	3	TBD	TBD
WHITESBORO	AL	April 28, 2014	23:32	Tornado	EF3	0	0	TBD	TBD
ROCKLEDGE	AL	April 29, 2014	0:17	Tornado	EF1	0	0	TBD	TBD
Totals:						0	41	\$41,321,288.84	\$106,229.97

Location

All areas of Etowah County are equally at risk for tornado activity.

Extent

26 tornadoes were reported in Etowah County from January 1, 1950 to December 31, 2014. Six other are on record before 1950. Statistics from these events are not available, as records are much less thorough before 1958. The total property damages for these events are approximately \$41.3 million. There is \$106,229 reported in crop damages. The County and municipalities have no record of experiencing an F5 tornado, but that is not to say it would not happen. Damages from such an event would likely cause destruction of structures, loss to agriculture and livestock, interruption in power and other utility services and casualties. The following text describes the history of tornado events in Etowah County.

- **1804 (Exact Date Unknown)** - The tornado traveled east northeast but no other information was available.
- **December 25, 1886** – The tornado tracked east northeast but no other information was available.
- **April 2, 1882** – The tornado tracked northeast. No other information was available.
- **January 26, 1908** – An F-1 tornado (estimated) struck the Hokes Bluff/Coates Bend area at around 18:00 destroying a barn and a farm house.
- **March 13, 1913** – An F-3 tornado (estimated) struck East Gadsden and Hokes Bluff (time unknown). Four people died in three homes in Hokes Bluff. As of this writing, this is the last recorded death directly related to a tornado in Etowah County.
- **May 27, 1924** – An F-2 tornado (estimated) struck the South Gadsden area at around 04:45. The tornado injured eight people. Three homes were demolished, and three were damaged. Several barns were destroyed.
- **April 29, 1958** – An F-1 tornado (estimated) caused damage highly localized to Camp Sibert area. The tornado resulted in no deaths or injuries. Property damage was estimated at \$25,000.
- **December 30, 1969** – An F-2 tornado (estimated) swept through the northwestern Calhoun County town of Ohatchee and the south central Etowah County community of Southside early Tuesday afternoon, injuring two people, and causing \$1.62 million in property damage.
- **April 02, 1970** – A funnel cloud was sighted at Ohatchee moving northeast. An F2 tornado (estimated) touched down at 01:20, approximately 7 miles south of Gadsden near Glencoe. The tornado demolished a service station and mobile home, partially unroofing several houses and damaging several mobile homes. The tornado briefly touched down in Hokes Bluff damaging several buildings. Property Damage was estimated at \$250,000.00 for Etowah County. No fatalities or injuries were reported in Etowah County.
- **June 15, 1971** – An F-1 tornado touched down in the Young’s Chapel area, damaging a home and a store, and uprooting several trees. No deaths or injuries were reported with this tornado. It caused \$14,000 in damage.

- **March 20, 1976** – A brief tornado touchdown occurred at approximately 23:20, from a 33 yard wide F0 tornado. The F0 tornado caused wind damage to a 14 to 15 block area. One house was unroofed, along with trees and power lines downed. Estimated Property Damage was \$25,000.00 for Etowah County.
- **April 4, 1977** – An F-2 tornado touched down at 14:30, near Southside community. The tornado destroyed 3 houses, 6 mobile homes, and 17 farm buildings. Nine homes received major damage from the tornado. The tornado caused no deaths, but injured four people. Estimated Property Damage was \$250,000.00 for Etowah County.
- **June 22, 1977** – An F-2 tornado touched down near Gadsden at 19:45. Two outbuildings were destroyed and 3 were damaged. Numerous trees were uprooted. Golf ball to tennis ball size hail was also reported. No deaths or injuries were reported. Property damage was estimated at \$250,000.
- **April 27, 1980** – An F-2 tornado was reported near the Egypt community at 00:05, in northwest Etowah County. Many trees were uprooted and snapped off. One garage was demolished completely. Small to Golf ball size hail covered the ground 6 to 8 inches deep. Estimated Property Damage was \$25,000.00 for Etowah County. No deaths or injuries were reported.
- **June 17, 1980** – An F-2 tornado moved into through Southside at 18:30. The tornado moved at tree top level, toppling trees in multiple directions. Several houses and mobile homes were damaged and a roof was almost completely removed from 1 house. The tornado caused no death or injuries. Property damage was estimated at \$250,000.
- **June 16, 1983** – An F-1 tornado moved through Southside at 15:10. The tornado began as a waterspout over the Coosa River. A boat was blown out of the water and heavily damaged. Two mobile homes were overturned in the Southside area, injuring one person. The police department’s radio tower was bent over nearly to the ground and trees were uprooted. There was also damage to the elementary school and some stores. The tornado cause one injury and no deaths. It resulted in an estimated \$250,000 in property damage.
- **April 5, 1985** – An F-3 tornado touched down in the Sardis City area at 17:10. 10 homes were destroyed, cars were blown into houses, one community was totally destroyed, one stable was destroyed, and 7 chicken houses were demolished. One woman was injured in her pickup truck. It resulted in \$2.5 million in damage.
- **August 16, 1985** – The remnants of Hurricane Danny (then Tropical Depression Danny) spawned 34 tornadoes in Alabama. One was a brief F-0 tornado which spun up between I-59 and US-11 in Attalla. Little damage and no injuries resulted.
- **November 22, 1992** – An F-2 tornado touched down in Sardis City at 0815. The tornado moved through the city and into DeKalb County causing structural damage and downing numerous trees. No injuries were reported. Records do not show how much damage was done in Etowah County.
- **April 16, 1998** - An F-1 tornado began just west of Gallant in western Etowah County at 20:46. Hundreds of trees were snapped and uprooted from 1 mile west of Gallant to 2

miles west of Attalla. One trailer was flipped over on its top, and it lost more than half of its metal roof. One old barn lost its entire roof. Another trailer, about 6 miles east-northeast of Gallant, lost its roof. Several trees fell onto homes along the path. The tornado resulted in no injuries and \$110,000 in property and crop damage.

- **April 16, 1998** - An F-1 tornado began just northwest of Gadsden along US 11 at 21:01. The tornado traveled along US 11 into Reece City. Hundreds of trees were snapped and uprooted along the path, and a few of the trees fell onto homes. The tornado resulted in no injuries and \$60,000 in property and crop damage.
- **February 27, 1999** – An F-0 tornado touched down just inside the Etowah County line near Southside. The tornado caused some minor damage to a house and knocked a few trees down on Babe Jackson Road then crossed H. Neely Henry Lake on the Coosa River. On the eastern bank of the lake, the roof was torn off one mobile home and minor damage occurred to several other homes and outbuildings. Several trees were uprooted in the area. The tornado resulted in no injuries and \$25,000 in property damage.
- **December 16, 2000** – The most destructive tornado in Etowah County’s recorded history, this F-3 tornado touched down at 14:46. The tornado track was 12.8 miles long and just over one quarter of a mile or about 500 yards wide at its widest point. The tornado touched down near Tidmore Bend, 5.3 miles east north east of the city of Gadsden, at 246 PM and lifted at 305 PM near Pollard Bend in Cherokee County. The tornado track was 8.1 miles in Etowah County and 4.7 miles in Cherokee County for a total of 12.8 miles. The most significant damage with the tornado was in the Coats Bend Community of Etowah County where 14 injuries occurred and approximately 250 homes were either totally destroyed or had major damage. Total property damage caused by this tornado was \$14 million.
- **November 24, 2001** – The most violent tornado in Etowah County’s recorded history, this F-4 tornado moved into Etowah County shortly after it formed in Blount County at 14:30. The tornado entered western Etowah County in the town of Altoona. One church was also destroyed. The tornado affected the south and east sections of Altoona. The tornado descended a steep hill and downed an entire stand of pine trees at mid-trunk. Several homes and trailer-homes were damaged or destroyed, including a well-constructed \$250,000 home which was completely destroyed, the third occurrence of F4 magnitude damage. The tornado crossed SR 132, ascending a steep hill, and dissipated. At its widest point, the tornado was approximately one-quarter mile wide. Debris was scattered several miles past the end of the tornado track. The tornado cause three injuries and approximately \$1.5 million in property damage. 32 structures were destroyed.
- **November 10, 2002** – An F-1 tornado briefly affected the Gallant community after moving in from Blount County at around 20:46. The tornado downed several trees before lifting. It caused no injuries and \$5,000 in property and crop damage.
- **March 19, 2003** – An F-0 tornado touched down in a heavily wooded area near the top of the ridge that forms Lookout Mountain in northeast Etowah County at 13:57. Besides

trees, no other damage occurred since it was in an extremely remote area. No injuries were reported, and \$2,000 in crop damage was generated by this tornado.

- **April 27, 2011** - A powerful storm system crossed the Southeast United States on Wednesday, April 27, 2011, resulting in a large and deadly tornado outbreak. This epic event broke the record for number of tornadoes in a day for the state of Alabama, becoming the most significant tornado outbreak in Alabama history. Central Alabama had two rounds of severe weather that day. During the early morning hours, a Quasi-Linear Convective System quickly moved across the northern half of the National Weather Service, Birmingham county warning area. Straight line winds of 90 mph (78kts) or greater and 11 tornadoes lead to widespread damage and power outages. During the afternoon, long-lived supercell thunderstorms produced long-track, strong and violent tornadoes. Destruction and loss of life across many towns and communities was devastating. A long track tornado moved across the city of Tuscaloosa and the western suburbs of Birmingham, resulting in the complete destruction of whole neighborhoods and numerous injuries and fatalities in those heavily populated areas. The same parent supercell produced another violent tornado in east Central Alabama as it tracked across St. Clair, Etowah and Calhoun Counties, resulting in additional fatalities and incredible damage to a number of neighborhoods. Most of the violent tornadoes from this day were captured on video by a number of people, including storm spotters and chasers, as well as numerous television news crews and remotely controlled web-enabled video cameras. This allowed unprecedented coverage and viewing of this historic event in real time from people worldwide.

An EF-4 tornado initially touched down in eastern Jefferson County, north northeast of Trussville. The tornado moved northeast through portions of St. Clair, Calhoun, Etowah and Cherokee Counties, before it moved into Georgia, across Polk, Floyd and Bartow (See Storm Data Peachtree City) Counties. The tornado moved into southeastern Etowah County, east of Cannon Gap Rd, where it destroyed several homes on Happy Hollow Rd, Pamridge Rd, and Mountain Way Road and caused heavy tree damage. This tornado just clipped the corner of the county. The tornado crossed back into Calhoun County, just south of US Hwy 278. The tornado injured several people, and caused \$9.4 million in damage.

- **September 4, 2011** - An EF-0 tornado, associated with Tropical Storm Lee, with estimated peak winds of 80 MPH touched down in Rainbow City at 14:51. After touching down near Hill St, the tornado took a turn to the northwest, crossing U.S. Highway 411 west of Bland St. The tornado turn back to the north and lifted near Irene St., west of Alabama Highway 77. Ten to 15 pine trees were snapped and a few hardwood trees were uprooted. Several HVAC units were blown off the roof of Rainbow City Hall on U.S. Highway 411 and minor structural damage occurred at the Spring Lake Lodge Apartments. The tornado lifted one minute later. It resulted in no injuries and \$30,000 in property damage.

- **March 18, 2013** – This EF-1 tornado initially touched down in Marshall County in Boaz and moved eastward into Etowah County at 14:43 about a half of a mile west of Oak Drive where it snapped and uprooted several pine trees. From there it moved to the east and crossed Broadwell Road and overturned a tractor trailer and a camper. The tornado continued eastward, snapping and uprooting trees along the path. Several barns and small outbuildings sustained roof damage. As the tornado crossed Chumley Road, two mobile homes were overturned while more trees were uprooted. The most extensive damage occurred as the tornado approached Rhoden Road. A mobile home was lifted and overturned leaving one person seriously injured and two others with minor injuries. In this same area, two additional mobile homes were destroyed. As the tornado crossed Brow Road, a one story brick home had one third of its roof removed and wind-blown debris was observed on all four sides of the home. The tornado continued further east for approximately 300 yards before dissipating as it approached Sand Valley Road at 14:48. This tornado caused three injuries. As of this writing, the final damage numbers have not been tabulated.
- **April 28, 2014** – This EF-3 tornado initially touched down just south of Brow Road, about 4.5 miles east of Sardis City at 23:32, snapping and uprooting many trees. The tornado rapidly intensified as it tracked northeast. Severe damage occurred along Liberty Hill Road where a home was lifted off its block foundation and moved about 60-80 feet from its original location. Despite this, most of the exterior walls (and even a portion of the roof) remained intact. Numerous trees around this property were snapped near the base indicating very strong winds. Several manufactured homes were completely destroyed in this area as well. Two other homes sustained significant roof loss and exterior wall damage. Along Horton Gap Road, a two-story home was destroyed with just a few interior walls left standing. Much of the debris was thrown several hundred yards away from its original location and trees were ripped out of the ground and thrown. Just northeast of this location, a large wood-framed chicken house was destroyed. At these locations, the tornado was at its peak intensity with winds estimated between 135 and 155 mph. On either side of the center line track, damage was seen along Owens Road (west of the track) and Roden Road (east of the track), as a result of inflow into the storm. Structural damage along these roads resulted in loss of roof and exterior walls/side panels as well as numerous trees snapped or uprooted. The tornado crossed into DeKalb County near the intersection of Gene Burns Rd and County Road 4 at 23:37. This tornado caused no injuries. As of this writing, the final damage numbers have not been tabulated.
- **April 29, 2014** - A short-lived EF-1 tornado touched down at 00:17 along Egypt Road near Vaughn Lane snapping a few trees. The tornado tracked north-northeast and intensified near Shady Grove Road where a single-wide manufactured home was destroyed. Near the intersection of Mountainboro Road and Carlisle Cut Off, a house was shifted off its foundation, but the house itself sustained only minor roof damage. A wood barn in a field was also heavily damaged. Just south of Lawson Gap Road, several trailers

were damaged with one losing its roof and portion of its exterior walls. Trees were snapped or uprooted on the west side of Mountainboro Road. The tornado was at its peak intensity along Mountainboro Road between Shady Grove Road and Lawson Gap Road, with maximum winds between 90 and 100 mph. The tornado continued north, causing additional damage along Skyhaven Drive, where a two-story house lost a portion of its roof covering. Several trees were snapped or uprooted around this location as well. To the north, off Douglas Drive, a manufactured single-wide home lost most of its roof, its entire garage/car port and a good portion of one exterior wall. The tornado crossed U.S. Highway 431, snapping several trees near the intersection of Highway 205. Between Cox Gap Road and Gaines Street several large trees were snapped or uprooted and displayed a convergent path toward the center line of the tornado. The tornado crossed Sardis Road snapping a few trees near the intersection of Sardis Cut Off Road before lifting at 00:27. The tornado caused no injuries. As of this writing, the final damage numbers have not been tabulated.

Probability of Tornadoes in Etowah County

It is impossible to determine the exact probability of tornado activity, however, given the long reporting period that data had been recorded for tornadoes, it is reasonable to assume that the average annual occurrence of tornadoes in the County will remain constant with information previously presented. The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The following table represents the scale of probability:

Probability Ranking	Percent chance of occurrence in any year
Low	0% - 33%
Moderate	34% - 66%
High	67% - 100%

26 events out of a 64-year reporting period averages to 46% probability annually, which is considered moderate probability of occurrence

Tornado Vulnerability in Etowah County

Tornadoes have an equal chance of striking any place in the county. The most vulnerable populations will be those that live in substandard housing (especially mobile homes), have trouble sheltering due to functional or access needs, and/or have trouble receiving weather warnings due to language issues. The following is a breakdown of this vulnerability for each jurisdiction (data via the US Census Bureau):

FIGURE 6.6 TORNADO/SEVERE THUNDERSTORM/WINTER STORM VULNERABILITY IN ETOWAH COUNTY

Jurisdiction	2010 Population (+/- from 2000)	2010 Number of Households	Individuals with Disabilities (ages 5+)	% of Individuals over the age of 65	% of Individuals Below Poverty Level	% in Mobile Homes	% Speak English Less than "Very Well"
Altoona	933 (-51)	317	n/a	16.3%	17.0%	12.6%	0.0%
Attalla	6,048 (-544)	2,442	n/a	17.2%	17.4%	6.4%	3.8%
Etowah County	104,430 (+971)	42,036	22,560 (23.4%)	15.8%	13.1%	11.7%	1.7%
Gadsden	36,856 (-2122)	15,717	n/a	16.7%	20.2%	3.6%	3.0%
Glencoe	5,160 (-8)	2,129	n/a	17.2%	9.3%	10.4%	0.3%
Hokes Bluff	4,286 (+137)	1,747	n/a	17.4%	7.9%	5.0%	0.0%
Rainbow City	9,602 (+1174)	4,113	n/a	16.8%	16.3%	9.4%	2.0%
Reece City	653 (+19)	258	n/a	15.8%	13.2%	11.9%	2.8%
Ridgeville	112 (-46)	46	n/a	17.0%	39.8%	16.4%	0.0%
Sardis City	1,704 (+266)	657	n/a	16.1%	12.6%	7.0%	0.3%
Southside	8,412 (+1376)	3,228	n/a	13.4%	5.4%	4.0%	0.6%
Walnut Grove	698 (-12)	321	n/a	15.9%	16.6%	37.0%	0.5%

The following is a summary of tornado vulnerability for each jurisdiction:

Altoona:

The City of Altoona has a population of 933 people, living in 317 households. All 317 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 12.6% of the population.

The following key facilities in the Town of Altoona are vulnerable to tornadoes:

- Altoona Town Hall
- Altoona Fire Department
- Altoona Police Department
- Altoona Water & Sewer Board Assets
- AMED Ambulance Service Headquarters
- West End Elementary School

A tornado in the Town of Altoona has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Given that the Town Hall, Fire Department, and AMED Ambulance Service are in close proximity to one another, a tornado through downtown Altoona would be devastating to the local government's ability to provide crucial services. AMED also serves other parts of the county, so a disruption to their service would likely have negative effects on EMS services throughout Etowah County. Mutual aid would be heavily relied upon in this situation. The Etowah County Board of Education would have to make arrangements to accommodate the displaced students at West End Elementary School.

An F-4 tornado moved through a residential area of the Town of Altoona on November 24, 2001, causing \$2.01 million (adjusted for inflation) in damage. It is expected another tornado in Altoona would result in similar damage.

Attalla:

The City of Attalla has a population of 6048 people, living in 2442 households. All 2442 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 6.4% of the population.

The following key facilities in the City of Attalla are vulnerable to tornadoes:

- Attalla City Hall
- Attalla Elementary School
- Attalla Fire Department – Station 1
- Attalla Fire Department – Station 2
- Attalla Fire Department – Station 3
- Attalla Police Department
- Attalla Public Works Department
- Attalla Water & Sewer Board Assets
- Etowah Middle School

- Etowah High School

A tornado in the City of Attalla has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Attalla Fire Department is home to one of three hazardous materials teams in the county. If their assets are destroyed, it would have a negative effect on the ability of local first responders to mitigate a hazardous materials event in the county. The Attalla City Schools Board of Education would have to make arrangement to accommodate the displaced students at Attalla Elementary, Etowah Middle School, and Etowah High School should these facilities be destroyed by a tornado.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the City of Attalla would generate \$1.09 million (adjusted for inflation) in financial losses.

Etowah County:

While the assets of the local government of Etowah County would aid in response and recovery missions throughout the county, this section will focus on the people and assets located in unincorporated areas of the county. The unincorporated portion of Etowah County has a total population of 29,966 people, living in 11,061 households. All 11,061 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for more than 10% of the population.

The following key assets owned by the Etowah County Commission, and facilities in the unincorporated areas of Etowah County are vulnerable to tornadoes:

- Ballplay 1 Volunteer Fire Department
- Ballplay 2 Volunteer Fire Department
- Big Wills Water & Fire Pro Authority
- Black Creek Fire Department
- Carlisle Elementary School
- Coates Bend Volunteer Fire Department
- Crems Water & Fire Pro Authority
- Douglas Water & Fire Pro Authority
- Duck Springs Elementary School
- Egypt Volunteer Fire Department

- Etowah County Courthouse
- Etowah County Sheriff's Office/Judicial Building/Detention Center
- Etowah County Engineering Department – Main Building
- Etowah County Engineering Department – Attalla Shop
- Etowah County Engineering Department – Gadsden Shop
- Fords Valley & Highway 278 Water Cooperative
- Gallant Volunteer Fire Department
- Gaston School
- Highland Elementary School
- Highland Volunteer Fire Department
- Highland Water & Fire Pro Authority
- Ivalee Elementary School
- Ivalee Volunteer Fire Department
- Keener Volunteer Fire Department
- Lookout Mountain Volunteer Fire Department
- Mountainboro Volunteer Fire Department
- New Union Volunteer Fire Department
- Northeast Etowah County Water Cooperative
- Sand Valley Volunteer Fire Department
- Tidmore Bend Volunteer Fire Department
- Tillison Bend Water & Fire Pro Authority
- West Etowah Water & Fire Pro Authority
- West Etowah Volunteer Fire Department
- Whitesboro Elementary School
- Whorton Bend Water & Fire Pro Authority
- Whorton Bend Volunteer Fire Department

A tornado in the unincorporated parts of Etowah County has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. A heavy demand would be placed upon law enforcement services. Fire departments in the unincorporated areas are usually small, volunteer based, and would be forced to rely heavily on mutual aid. The Etowah County Schools' Board of Education would have to make arrangement to accommodate the displaced students at its affected schools.

An EF-3 tornado struck the community of Coates Bend on December 16, 2000. The impact caused \$13.8 million (adjusted for inflation) in financial losses. A similar tornado could be expected to have a similar impact, based on where it hits.

Gadsden:

The City of Gadsden has a population of 36,856 people, living in 15,717 households. All 15,717 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 3.6% of the population.

The following key facilities in the City of Gadsden are vulnerable to tornadoes:

- Adams Elementary School
- Eura Brown Elementary School
- Coosa Christian School
- Donehoo Elementary School
- Episcopal Day School
- George W. Floyd Elementary School
- Gadsden City Hall
- Gadsden City High School
- Gadsden Fire Station #1
- Gadsden Fire Station #2
- Gadsden Fire Station #4
- Gadsden Fire Station #5
- Gadsden Fire Station #6
- Gadsden Fire Station #7
- Gadsden Fire Station #8
- Gadsden Fire Station #9

- Gadsden Fleet Management Department
- Gadsden Middle School
- Gadsden Police Department
- Gadsden Public Works Department
- Gadsden Regional Medical Center
- Gadsden State Community College
- Gadsden Water Works & Sewer Board
- Gadsden/Etowah County Emergency Operations Center
- Goodyear Tire & Rubber Company (Etowah County's Largest Employer)
- Keystone Foods (Etowah County's 10th Largest Employer)
- Koch Foods (Etowah County's 7th Largest Employer)
- Litchfield Middle School
- R.A. Mitchell Elementary School
- Northeast Alabama Regional Airport
- Riverview Regional Medical Center
- Saint James Catholic School
- Emma Sansom Middle School
- Striplin Elementary School
- Walnut Park Elementary School
- Ray Thompson Elementary School

A tornado in the City of Gadsden has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of numerous shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Gadsden Fire Department is home to one of three hazardous materials teams in the county. If their assets are destroyed, it would have a negative effect on the ability of local first responders to mitigate a hazardous materials event in the county. The Gadsden/Etowah County Emergency Operations Center, co-located with the Gadsden Police Department in Gadsden City Hall, may have to be relocated to another facility. Etowah County's two hospitals are both located inside the City of Gadsden. A tornado strike to one would likely overwhelm regional hospitals and create a major problem in relocating patients.

The Gadsden City Schools Board of Education and administrators at the city's private schools would have to make arrangement to accommodate the displaced students at its affected schools. The administrators of the Gadsden City Community College would have to make accommodations for its 7,000+ students to continue their education.

The economy of Etowah County would likely take a hit if a large tornado were to pass through the City of Gadsden. All ten of the county's top employers are in the City of Gadsden. Most are within a few miles of each other.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the City of Gadsden would generate \$10.9 million (adjusted for inflation) in financial losses.

Glencoe:

The City of Glencoe has a population of 5160 people, living in 2129 households. All 2129 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 9.3% of the population.

The following key facilities in the City of Glencoe are vulnerable to tornadoes:

- Glencoe City Hall
- Glencoe Elementary School
- Glencoe Fire Station #1
- Glencoe Fire Station #2
- Glencoe High School
- Glencoe Middle School
- Glencoe Police Department
- Glencoe Public Works Department

- Glencoe Water & Sewer Board

A tornado in the City of Glencoe has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangements to accommodate the displaced students at Glencoe Elementary School, Glencoe Middle School, and Glencoe High School should these facilities be destroyed by a tornado.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the City of Glencoe would generate \$1.09 million (adjusted for inflation) in financial losses.

Hokes Bluff:

The City of Hokes Bluff has a population of 4286 people, living in 1747 households. All 1747 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 5.0% of the population.

The following key facilities in the City of Hokes Bluff are vulnerable to tornadoes:

- Hokes Bluff City Hall
- Hokes Bluff Elementary School
- Hokes Bluff Fire Department
- Hokes Bluff High School
- Hokes Bluff Middle School
- Hokes Bluff Police Department
- Hokes Bluff Public Works Department
- Hokes Bluff Water & Sewer Board

A tornado in the City of Hokes Bluff has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangements to accommodate the displaced students at Hokes Bluff Elementary School, Hokes Bluff Middle School, and Hokes Bluff High School should these facilities be destroyed by a tornado.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the City of Hokes Bluff would generate \$1.09 million (adjusted for inflation) in financial losses.

Rainbow City:

The City of Rainbow City has a population of 9602 people, living in 4113 households. It has shown the second largest rate of growth in Etowah County since 2000. All 4113 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 9.4% of the population.

The following key facilities in the City of Rainbow City are vulnerable to tornadoes:

- John Jones Elementary School
- Rainbow City Hall
- Rainbow City Fire Station #1
- Rainbow City Fire Station #2
- Rainbow City Police Department
- Rainbow City Streets Department
- Rainbow City Utility Department
- Rainbow Middle School
- Westbrook Christian School

A tornado in the City of Rainbow City has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Rainbow City Fire Department is home to one of three hazardous materials teams in the county. If their assets are destroyed, it would have a negative effect on the ability of local first responders to mitigate a hazardous materials event in the county. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at John Jones Elementary and Rainbow Middle School should these facilities be destroyed by a tornado. Administrators at Westbrook Christian School would also have to make arrangement to accommodate displaced students should its facility be destroyed by a major severe tornado.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the City of Rainbow City would generate \$1.09 million (adjusted for inflation) in financial losses.

Reece City:

The Town of Reece City has a population of 653 people, living in 258 households. All 258 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 11.9% of the population.

The following key facilities in the Town of Reece City are vulnerable to tornadoes:

- Reece City Town Hall
- Reece City Volunteer Fire Department

A tornado in the Town of Reece City has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Fire service would likely be overwhelmed and disrupted.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the Town of Reece City would generate \$32,000 (adjusted for inflation) in financial losses.

Ridgeville:

The Town of Ridgeville has a population of 112 people, living in 46 households. All 46 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 16.4% of the population.

The following key facilities in the Town of Ridgeville are vulnerable to tornadoes:

- Ridgeville Town Hall
- Ridgeville Water Works

A tornado in the Town of Ridgeville has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the Town of Ridgeville would generate \$5500 (adjusted for inflation) in financial losses.

Sardis City:

The Town of Sardis City has a population of 1704 people, living in 657 households. All 657 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 7% of the population.

The following key facilities in the Town of Sardis City are vulnerable to tornadoes:

- Sardis High School
- Sardis Middle School
- Sardis City Police Department
- Sardis City Town Hall
- Sardis City Volunteer Fire Department
- Sardis City Water Board

A tornado in the Town of Sardis City has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at Sardis Middle School should it be impacted by a tornado.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the Town of Sardis City would generate \$1.09 million (adjusted for inflation) in financial losses.

Southside:

The City of Hokes Southside has a population of 8412 people, living in 3228 households. Southside is the fastest growing city in Etowah County by population. All 3228 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 4% of the population.

The following key facilities in the City of Southside are vulnerable to tornadoes:

- Southside City Hall
- Southside Elementary School
- Southside Fire Department
- Southside High School
- Southside Police Department
- Southside Street & Sanitation Department
- Southside Water & Sewer Board

A tornado in the City of Southside has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at Southside Elementary School and Southside High School should these facilities be destroyed by a tornado.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the City of Southside would generate \$1.09 million (adjusted for inflation) in financial losses.

Walnut Grove:

The Town of Walnut Grove has a population of 698 people, living in 321 households. All 321 households are susceptible to tornadoes. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 37% of the population. This is easily the highest rate in Etowah County, making the Town of Walnut Grove especially susceptible to tornadoes.

The following key facilities in the Town of Walnut Grove are vulnerable to tornadoes:

- Walnut Grove Town Hall
- Walnut Grove Volunteer Fire Department
- Walnut Grove Water Works

- West End High School

A tornado in the Town of Walnut Grove has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A tornado could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at West End High School.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a tornado in the Town of Walnut Grove would generate \$1.09 million (adjusted for inflation) in financial losses.

Severe Thunderstorms

Nature of Severe Thunderstorms in Etowah County

A severe thunderstorm is a storm which has hail at least one inch in diameter, and/or winds in excess of 58 miles per hour. Severe thunderstorms cause damage and injuries through extremely gusty winds which damage structures and trees, large hail impacts, flash floods, and lightning. Storms which do not meet severe criteria also do a considerable amount of damage in Etowah County. Severe thunderstorms also create tornadoes.

Severe thunderstorms are most common between March and August, with a secondary peak in November. Storms which occur between March and May are associated with cold fronts in the primary severe weather season and are much more likely to produce tornadoes. Isolated summertime thunderstorms develop randomly and rarely produce tornadoes. Severe thunderstorms may also occur with land-falling tropical systems.

Severe thunderstorms are a direct threat to life and property. They cause death and injury through lightning, hail, and wind damage such as downed trees and windborne debris. Severe thunderstorms may produce widespread damage to homes, infrastructure, and vegetation. They may also damage the power infrastructure, rendering critical facilities, businesses, and homes without power for days or weeks.

History of the Severe Thunderstorms in Etowah County

Records from NOAA's Storm Events Database show 360 storm related events (not counting tornadoes) between January 1, 1950 and December 31, 2014. Reliable data on deaths, injuries, property damages, and crop damages are not available before 1994. Since 1994, thunderstorms have accounted for zero deaths, 13 injuries, and \$2.2 million in property and crop damages (adjusted for inflation). Given the averages over the 21 years of reliable data (0.61 injuries/year, \$105,000 damage/year), it is safe to assume Etowah County has endured 39 injuries since 1950 due to severe thunderstorms, and \$6.72 million in damage since 1950 due to severe thunderstorms.

Location

All areas of Etowah County are equally at risk for severe thunderstorms.

Extent

360 thunderstorm events were reported in Etowah County from January 1, 1950 to December 31, 2014. Reliable damage and injury data before 1994 is not available. The total number of injuries related to severe thunderstorms since 1994 is 13. The total property damage related to severe thunderstorms since 1994 is \$2,204,000.00. The total crop damage is \$24,000. The following text describes some of the more extreme severe thunderstorm events in Etowah County.

- **February 27, 1999** - Numerous trees and power lines were knocked down or uprooted in southern Etowah County sporadically along this path. Many trees blocked roadways. 10 single family homes were totally destroyed. 20 homes sustained major damage. Minor damage was reported to another 29 homes. Two mobile homes were demolished and four additional mobile homes received minor damage. One man in North Gadsden was injured when his home crumbled. He had several bruises and a concussion. In Walnut Park, one woman died, apparently of natural causes, but it occurred in the middle of the storm.

Stowers Manufacturing Plant in Gadsden had a large portion of its roof torn off. The damage was heavily concentrated in Gadsden and Walnut Park. Total damage related to this severe thunderstorm was \$800,000, the mostly costly in Etowah County's recorded history. This does not account for a tornado which was spawned from this storm in Southside.

- **February 16, 2001** - Etowah County reported numerous trees and power lines knocked down. Many of the downed trees blocked roadways causing temporary road closures. Wind gusts of 68 mph were measured at the Emergency Management Office in Gadsden. One person suffered minor injuries when a tree fell on the side of their traveling vehicle. Total damage related to this severe thunderstorm was \$20,000.
- **June 3, 2001** - Dime to quarter size hail was observed in and around the city of Gadsden and in Hokes Bluff. Several trees were blown down in Attalla. Three chicken houses had significant roof damage in central Etowah County. Nine injuries and \$15,000 in damage occurred as the result of this severe thunderstorm.
- **April 11, 2008** - Sporadic uprooted and snapped trees were found along a 4.5 mile distance in the city of Gadsden. Some of the downed trees fell on houses and out buildings causing structural damage. Other damage included lost shingles and siding. One older brick building in the downtown area lost a portion of a wall. The Etowah County EOC measured a wind gust to 86 mph. Total damage related to this severe thunderstorm was \$100,000.
- **August 2, 2008** - A thunderstorm downburst produced an extensive area of damage in southern Etowah County, just south of the Southside Community. The damage swath extended from the southern end of Babe Jackson Drive, northeastward for about 3 miles, to AL-77. The heaviest concentration of damage was in the Grant Drive, Routon Circle, Meadow Circle, Nabors Drive, Broughton Springs Road, and Mountain Top Road areas. At least 27 homes and other structures, and 2 vehicles, received minor to moderate damage due to the wind and from fallen trees. Around 100 trees were either uprooted or snapped off. Peak wind gusts were estimated around 100 mph. Total damage related to this severe thunderstorm was \$154,000.
- **September 9, 2008** - One person was struck by lightning on Tabor Cut-off Road, near Nocalula Falls.
- **March 18, 2013** - An upper trough became negatively tilted as it moved into the Mississippi River Valley. A strong cold front trailed southward from the trough and swept through the state. Ahead of this cold front, an intense derecho moved through central Alabama during the afternoon and evening hours of Monday, March 18th. The morning started out cloudy across Alabama, but as dry air aloft filtered into the state from the southwest, the clouds thinned, allowing surface based instability to increase into the 1250-1750 J/kg range ahead of the developing line of thunderstorms. As the line entered the state from Mississippi, it brought with it damaging straight line winds of widespread reports of 60 to 80 mph, including a measured report of 88 mph. These winds resulted in trees and power lines down across the northern two-thirds of central Alabama. Along with the wind from the derecho, up to two inch hail was reported and eventually a tornado spun up in northern Etowah County. Ahead of the derecho, discrete thunderstorms developed as well. It was within these individual storms where some of the largest hail was reported, including baseball sized hail in Chilton County.

Along the northwest shore of Doctor Jenkins Lake, along Murphree Valley Road, approximately four dozen trees were uprooted in a short and narrow swath of wind damage. A mobile home was also overturned in the area. Trees were reported down on County Road 41 and Walnut Grove Road. A tree was blown down onto a home, entrapping the resident inside. Approximately 20 trees were down along Alabama Highway 77 in Rainbow City. In Southside, an anemometer registered 88 mph prior to losing a cup. Numerous trees and power lines were down in the area. The roof was removed off of a barn on Yancy Drive in Hokes Bluff. This severe storm caused ten injuries, the most by a severe storm in Etowah County’s recorded history. In all, 12 homes were destroyed, 31 received major damage, 56 received minor damage, and 50 others were affected. Final damage totals have not been tabulated as of this writing.

Probability of Severe Thunderstorms in Etowah County

It is impossible to determine the exact probability of severe thunderstorm activity, however, given the long reporting period that data had been recorded for tornadoes, it is reasonable to assume that the average annual occurrence of tornadoes in the county will remain constant with information previously presented. The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The following table represents the scale of probability:

Probability Ranking	Percent chance of occurrence in any year
Low	0% - 33%
Moderate	34% - 66%
High	67% - 100%

Data shows 228 days with thunderstorm events in Etowah County since 1950. That equates to one event every 104 days, or about three events every year in the 64-year reporting period. So the chance of a severe thunderstorm event in Etowah County based on data is 100% every year, which is considered a high probability of occurrence.

Severe Thunderstorm Vulnerability in Etowah County

Severe thunderstorms have an equal chance of striking any place in the county. The most vulnerable populations will be those that live in substandard housing (especially mobile homes), have trouble sheltering due to functional or access needs, and/or have trouble receiving weather warnings due to language issues. Refer to Figure 6.6 (Tornado/Severe Thunderstorm/Winter Storm Vulnerability in Etowah County) for a statistical breakdown of this information.

The following is a summary of severe thunderstorm vulnerability for each jurisdiction:

Altoona:

The Town of Altoona has a population of 933 people, living in 317 households. All 317 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 12.6% of the population.

The following key facilities in the Town of Altoona are vulnerable to severe thunderstorms:

- Altoona Town Hall
- Altoona Fire Department
- Altoona Police Department
- Altoona Water & Sewer Board Assets
- AMED Ambulance Service Headquarters
- West End Elementary School

A major severe thunderstorm in the Town of Altoona has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Given that the Town Hall, Fire Department, and AMED Ambulance Service are in close proximity to one another, a major severe thunderstorm through downtown Altoona would be devastating to the local government's ability to provide crucial services. AMED also serves other parts of the county, so a disruption to their service would likely have negative effects on EMS services throughout Etowah County. Mutual aid would be heavily relied upon in this situation. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at West End Elementary School.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the Town of Altoona could generate \$28,962 (adjusted for inflation) in financial losses.

Attalla:

The City of Attalla has a population of 6048 people, living in 2442 households. All 2442 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 6.4% of the population.

The following key facilities in the City of Attalla are vulnerable to severe thunderstorms:

- Attalla City Hall
- Attalla Elementary School
- Attalla Fire Department – Station 1
- Attalla Fire Department – Station 2
- Attalla Fire Department – Station 3
- Attalla Police Department
- Attalla Public Works Department
- Attalla Water & Sewer Board Assets
- Etowah Middle School
- Etowah High School

A major severe thunderstorm in the City of Attalla has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Attalla Fire Department is home to one of three hazardous materials teams in the county. If their assets are destroyed, it would have a negative effect on the ability of local first responders to mitigate a hazardous materials event in the county. The Attalla City Schools Board of Education would have to make arrangement to accommodate the displaced students at Attalla Elementary, Etowah Middle School, and Etowah High School should these facilities be destroyed by a major severe thunderstorm.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the City of Attalla could generate \$33,770 (adjusted for inflation) in financial losses.

Etowah County:

While the assets of the local government of Etowah County would aid in response and recovery missions throughout the county, this section will focus on the people and assets located in unincorporated areas of the county. The unincorporated portion of Etowah County has a total population of 29,966 people, living in 11,061 households. All 11,061 households are susceptible to severe

thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for more than 10% of the population.

The following key assets owned by the Etowah County Commission, and facilities in the unincorporated areas of Etowah County are vulnerable to severe thunderstorms:

- Ballplay 1 Volunteer Fire Department
- Ballplay 2 Volunteer Fire Department
- Big Wills Water & Fire Pro Authority
- Black Creek Fire Department
- Carlisle Elementary School
- Coates Bend Volunteer Fire Department
- Crems Water & Fire Pro Authority
- Douglas Water & Fire Pro Authority
- Duck Springs Elementary School
- Egypt Volunteer Fire Department
- Etowah County Courthouse
- Etowah County Sheriff's Office/Judicial Building/Detention Center
- Etowah County Engineering Department – Main Building
- Etowah County Engineering Department – Attalla Shop
- Etowah County Engineering Department – Gadsden Shop
- Fords Valley & Highway 278 Water Cooperative
- Gallant Volunteer Fire Department
- Gaston School
- Highland Elementary School
- Highland Volunteer Fire Department
- Highland Water & Fire Pro Authority
- Ivalee Elementary School
- Ivalee Volunteer Fire Department
- Keener Volunteer Fire Department
- Lookout Mountain Volunteer Fire Department
- Mountainboro Volunteer Fire Department

- New Union Volunteer Fire Department
- Northeast Etowah County Water Cooperative
- Sand Valley Volunteer Fire Department
- Tidmore Bend Volunteer Fire Department
- Tillison Bend Water & Fire Pro Authority
- West Etowah Water & Fire Pro Authority
- West Etowah Volunteer Fire Department
- Whitesboro Elementary School
- Whorton Bend Water & Fire Pro Authority
- Whorton Bend Volunteer Fire Department

A major severe thunderstorm in the unincorporated parts of Etowah County has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. A heavy demand would be placed upon law enforcement services. Fire departments in the unincorporated areas are usually small, volunteer based fire departments, and would be forced to rely heavily on mutual aid. The Etowah County Schools' Board of Education would have to make arrangement to accommodate the displaced students at its affected schools.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in Etowah County could generate \$283,382 (adjusted for inflation) in financial losses.

Gadsden:

The City of Gadsden has a population of 36,856 people, living in 15,717 households. All 15,717 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 3.6% of the population.

The following key facilities in the City of Gadsden are vulnerable to severe thunderstorms:

- Adams Elementary School
- Eura Brown Elementary School
- Coosa Christian School
- Donehoo Elementary School
- Episcopal Day School

- George W. Floyd Elementary School
- Gadsden City Hall
- Gadsden City High School
- Gadsden Fire Station #1
- Gadsden Fire Station #2
- Gadsden Fire Station #4
- Gadsden Fire Station #5
- Gadsden Fire Station #6
- Gadsden Fire Station #7
- Gadsden Fire Station #8
- Gadsden Fire Station #9
- Gadsden Fleet Management Department
- Gadsden Middle School
- Gadsden Police Department
- Gadsden Public Works Department
- Gadsden Regional Medical Center
- Gadsden State Community College
- Gadsden Water Works & Sewer Board
- Gadsden/Etowah County Emergency Operations Center
- Goodyear Tire & Rubber Company (Etowah County's Largest Employer)
- Keystone Foods (Etowah County's 10th Largest Employer)
- Koch Foods (Etowah County's 7th Largest Employer)
- Litchfield Middle School
- R.A. Mitchell Elementary School
- Northeast Alabama Regional Airport
- Riverview Regional Medical Center
- Saint James Catholic School
- Emma Sansom Middle School
- Striplin Elementary School
- Walnut Park Elementary School
- Ray Thompson Elementary School

A major severe thunderstorm in the City of Gadsden has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of numerous shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Gadsden Fire Department is home to one of three hazardous materials teams in the county. If their assets are destroyed, it would have a negative effect on the ability of local first responders to mitigate a hazardous materials event in the county. The Gadsden/Etowah County Emergency Operations Center, co-located with the Gadsden Police Department in Gadsden City Hall, may have to be relocated to another facility.

The Gadsden City Schools Board of Education and administrators at the city's private schools would have to make arrangement to accommodate the displaced students at its affected schools. The administrators of the Gadsden City Community College would have to make accommodations for its 7,000+ students to continue their education.

The economy of Etowah County could possibly take a hit if a large major severe thunderstorm were to pass through the City of Gadsden. All ten of the county's top employers are in the City of Gadsden. Most are within a few miles of each other.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the City of Gadsden could generate \$28,854 (adjusted for inflation) in financial losses.

Glencoe:

The City of Glencoe has a population of 5160 people, living in 2129 households. All 2129 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 9.3% of the population.

The following key facilities in the City of Glencoe are vulnerable to severe thunderstorms:

- Glencoe City Hall
- Glencoe Elementary School
- Glencoe Fire Station #1
- Glencoe Fire Station #2
- Glencoe High School
- Glencoe Middle School
- Glencoe Police Department
- Glencoe Public Works Department

- Glencoe Water & Sewer Board

A major severe thunderstorm in the City of Glencoe has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at Glencoe Elementary School, Glencoe Middle School, and Glencoe High School should these facilities be destroyed by a major severe thunderstorm.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the City of Glencoe could generate \$32,613 (adjusted for inflation) in financial losses.

Hokes Bluff:

The City of Hokes Bluff has a population of 4286 people, living in 1747 households. All 1747 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 5.0% of the population.

The following key facilities in the City of Hokes Bluff are vulnerable to severe thunderstorms:

- Hokes Bluff City Hall
- Hokes Bluff Elementary School
- Hokes Bluff Fire Department
- Hokes Bluff High School
- Hokes Bluff Middle School
- Hokes Bluff Police Department
- Hokes Bluff Public Works Department
- Hokes Bluff Water & Sewer Board

A major severe thunderstorm in the City of Hokes Bluff has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at Hokes Bluff Elementary School, Hokes Bluff Middle School, and Hokes Bluff High School should these facilities be destroyed by a major severe thunderstorm.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the City of Hokes Bluff could generate \$27,953 (adjusted for inflation) in financial losses.

Rainbow City:

The City of Rainbow City has a population of 9602 people, living in 4113 households. It has shown the second largest rate of growth in Etowah County since 2000. All 4113 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 9.4% of the population.

The following key facilities in the City of Rainbow City are vulnerable to severe thunderstorms:

- John Jones Elementary School
- Rainbow City Hall
- Rainbow City Fire Station #1
- Rainbow City Fire Station #2
- Rainbow City Police Department
- Rainbow City Streets Department
- Rainbow City Utility Department
- Rainbow Middle School
- Westbrook Christian School

A major severe thunderstorm in the City of Rainbow City has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Rainbow City Fire Department is home to one of three hazardous materials teams in the county. If their assets are destroyed, it would have a negative effect on the ability of local first responders to mitigate a hazardous materials event in the county. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at John Jones Elementary and Rainbow Middle School should these facilities be destroyed by a major severe thunderstorm. Administrators at Westbrook Christian School would also have to make arrangement to accommodate displaced students should its facility be destroyed by a major severe thunderstorm.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the City of Rainbow City could generate \$28,285 (adjusted for inflation) in financial losses.

Reece City:

The Town of Reece City has a population of 653 people, living in 258 households. All 258 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 11.9% of the population.

The following key facilities in the Town of Reece City are vulnerable to severe thunderstorms:

- Reece City Town Hall
- Reece City Volunteer Fire Department

A major severe thunderstorm in the Town of Reece City has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Fire service would likely be overwhelmed and disrupted.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the Town of Reece City could generate \$32,668 (adjusted for inflation) in financial losses.

Ridgeville:

The Town of Ridgeville has a population of 112 people, living in 46 households. All 46 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 16.4% of the population.

The following key facilities in the Town of Ridgeville are vulnerable to severe thunderstorms:

- Ridgeville Town Hall
- Ridgeville Water Works

A major severe thunderstorm in the Town of Ridgeville has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the Town of Ridgeville could generate \$23,155 (adjusted for inflation) in financial losses.

Sardis City:

The Town of Sardis City has a population of 1704 people, living in 657 households. All 657 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 7% of the population.

The following key facilities in the Town of Sardis City are vulnerable to severe thunderstorms:

- Sardis High School
- Sardis Middle School
- Sardis City Police Department
- Sardis City Town Hall
- Sardis City Volunteer Fire Department
- Sardis City Water Board

A major severe thunderstorm in the Town of Sardis City has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at Sardis Middle School should it be impacted by a major severe thunderstorm.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the Town of Sardis City could generate \$29,996 (adjusted for inflation) in financial losses.

Southside:

The City of Hokes Southside has a population of 8412 people, living in 3228 households. Southside is the fastest growing city in Etowah County by population. All 3228 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 4% of the population.

The following key facilities in the City of Southside are vulnerable to severe thunderstorms:

- Southside City Hall
- Southside Elementary School
- Southside Fire Department
- Southside High School
- Southside Police Department
- Southside Street & Sanitation Department
- Southside Water & Sewer Board

A major severe thunderstorm in the City of Southside has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at Southside Elementary School and Southside High School should these facilities be destroyed by a major severe thunderstorm.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the City of Southside could generate \$33,215 (adjusted for inflation) in financial losses.

Walnut Grove:

The Town of Walnut Grove has a population of 698 people, living in 321 households. All 321 households are susceptible to severe thunderstorms. Most vulnerable would be those who live in substandard housing, especially mobile homes, which account for 37% of the population. This is easily the highest rate in Etowah County, making the Town of Walnut Grove especially susceptible to severe thunderstorms.

The following key facilities in the Town of Attalla are vulnerable to severe thunderstorms:

- Walnut Grove Town Hall
- Walnut Grove Volunteer Fire Department
- Walnut Grove Water Works
- West End High School

A major severe thunderstorm in the Town of Walnut Grove has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major severe thunderstorm could also disrupt essential governmental services. Police and fire service would likely be overwhelmed and disrupted. The Etowah County Board of Education would have to make arrangement to accommodate the displaced students at West End High School.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major severe thunderstorm in the Town of Walnut Grove could generate \$33,130 (adjusted for inflation) in financial losses.

Floods

Nature of the Hazard in Etowah County

Flooding may occur in two different forms. These are river floods and overland floods. River floods are related to flooding that occurs with a body of water. Overland floods are related to periods when drainage systems (natural or manmade) become overwhelmed with rainwater.

River floods occur when a river, stream, pond, or other body of water becomes overwhelmed with water, causing the water to move to areas that are not normally submerged. This can occur over a period of time with excessive rainfall or snowmelt. It may also occur quickly, in what is called a flash flood. A flash flood may occur when an excessive amount of rain falls in a short time. Another cause of a flash flood may be when a dam or levee breaks, release a large amount of water which was formerly being contained.

River floods may occur anytime, but are most common between January and May. Flash floods are prone to occur anytime, especially with summertime thunderstorms and land falling tropical systems. Dam and levee breaches may occur anytime, but would be most likely with the occurrence of a large amount of rainfall. They are most common in areas adjacent to bodies of water. FEMA has issued flood maps for every area of Etowah County. These maps show the boundaries of areas with a 1% chance of experiencing flooding every year (100-year flood area), and 0.5% chance of experiencing flooding every year (500-year flood area). These maps may be accessed at the FEMA Flood Map Service Center (<http://msc.fema.gov/portal>).

Repetitive Loss and Severe Repetitive Loss Properties

A repetitive loss property is a structure covered by a contract for flood insurance made available under the NFIP that:

- Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and
- At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

A severe repetitive loss property is a structure that:

- Is covered under a contract for flood insurance made available under the NFIP; and
- Has incurred flood related damage –
 - For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or
 - For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

According to data received from the Alabama State National Flood Insurance Plan Coordinator, Etowah County has 12 repetitive loss properties, and zero severe repetitive loss properties. The repetitive loss properties are in the City of Attalla (4), the City of Gadsden (2), the City of

Rainbow City (4), and unincorporated areas of Etowah County (2). Of these 12 properties, ten are residential, one is commercial, and one is a place of worship.

FIGURE 6.6 ETOWAH COUNTY REPETITIVE LOSS PROPERTIES MAP

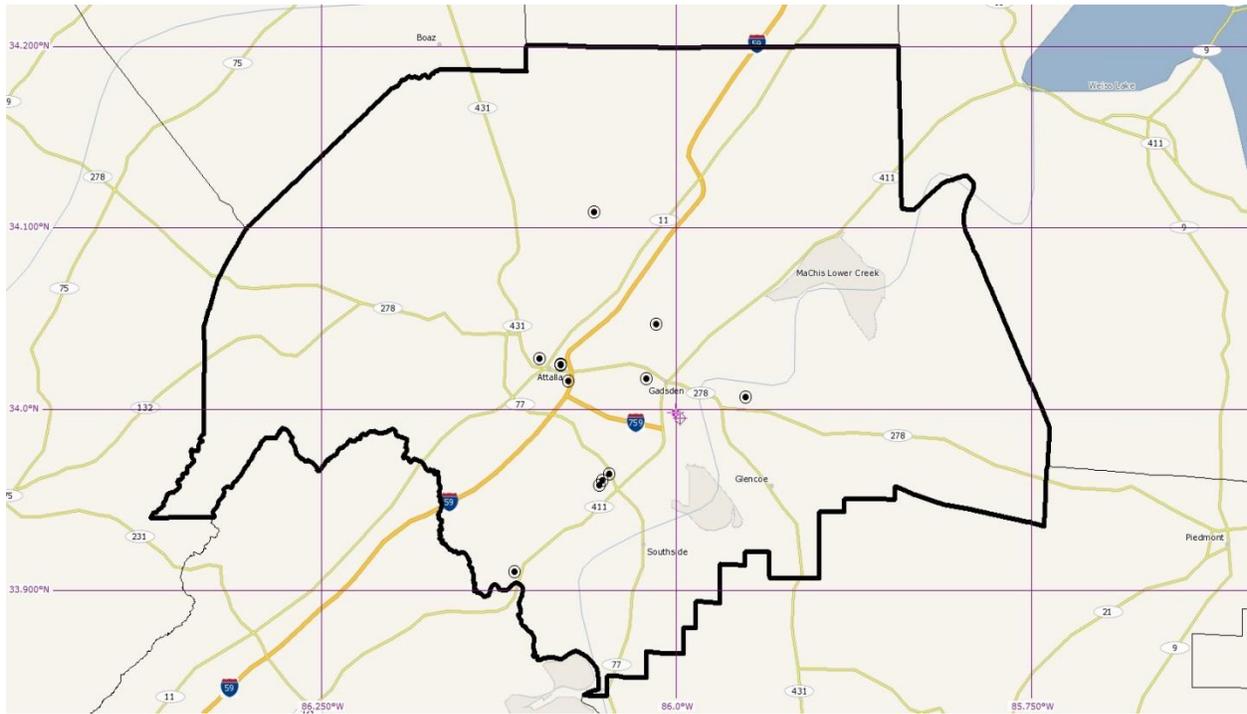


FIGURE 6.7 CITY OF ATTALLA REPETITIVE LOSS PROPERTIES AND MAP

STREET	PROPERTY TYPE	DATE OF LOSS #1	DATE OF LOSS #2	DATE OF LOSS #3
Line Street	Single Family	4/14/1979	4/15/1980	
5 th Avenue NW	Single Family	4/10/2000	2/17/2001	
Hammond Avenue	Single Family	3/3/1979	1/3/1982	
Line Street	Single Family	1/26/1996	5/3/1997	

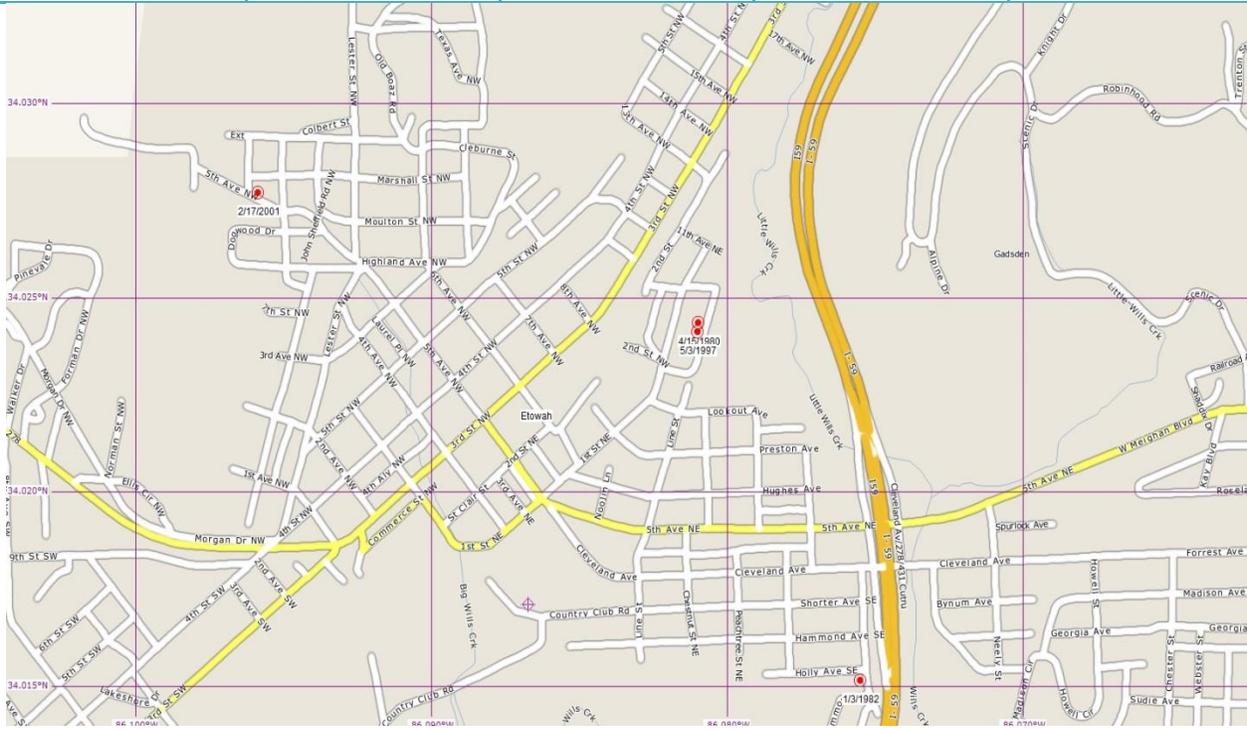


FIGURE 6.8 CITY OF GADSDEN REPETITIVE LOSS PROPERTIES AND MAP

STREET	PROPERTY TYPE	DATE OF LOSS #1	DATE OF LOSS #2	DATE OF LOSS #3
Tabor Road	Single Family	01/03/1982	02/18/1990	11/24/2001
S 12 th Street	Place of Worship	7/12/1984	3/5/1989	

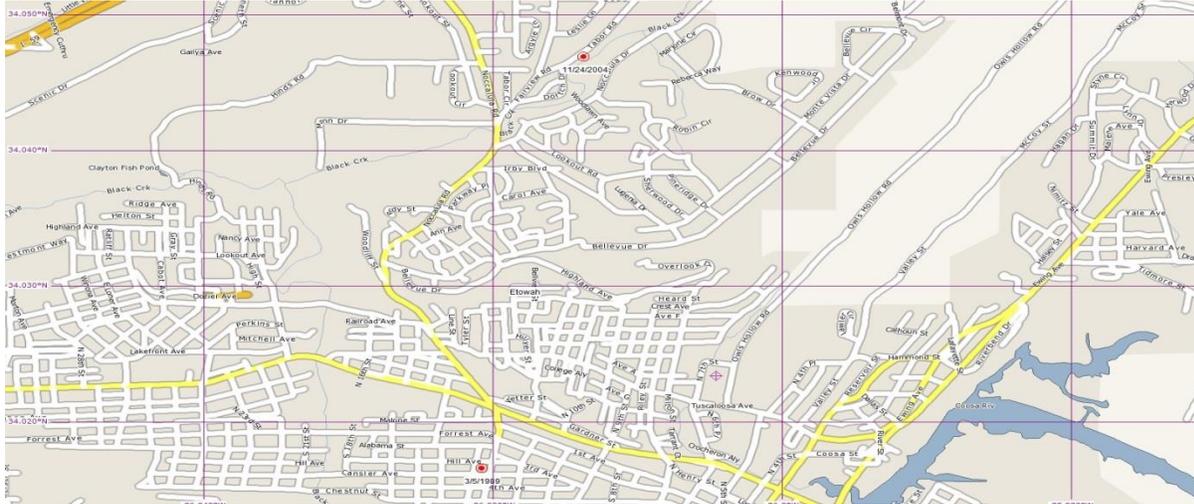


FIGURE 6.9 CITY OF RAINBOW CITY REPETITIVE LOSS PROPERTIES AND MAP

STREET	PROPERTY TYPE	DATE OF LOSS #1	DATE OF LOSS #2	DATE OF LOSS #3
Cove Creek Rd	Single Family	4/28/1997	6/4/1997	10/25/1997
W Grand Ave	Commercial	10/25/1997	11/23/2004	
Rainbow Haven	Single Family	10/26/1997	11/24/2004	
Seville Ln	Single Family	4/2/2000	11/26/2004	7/8/2013

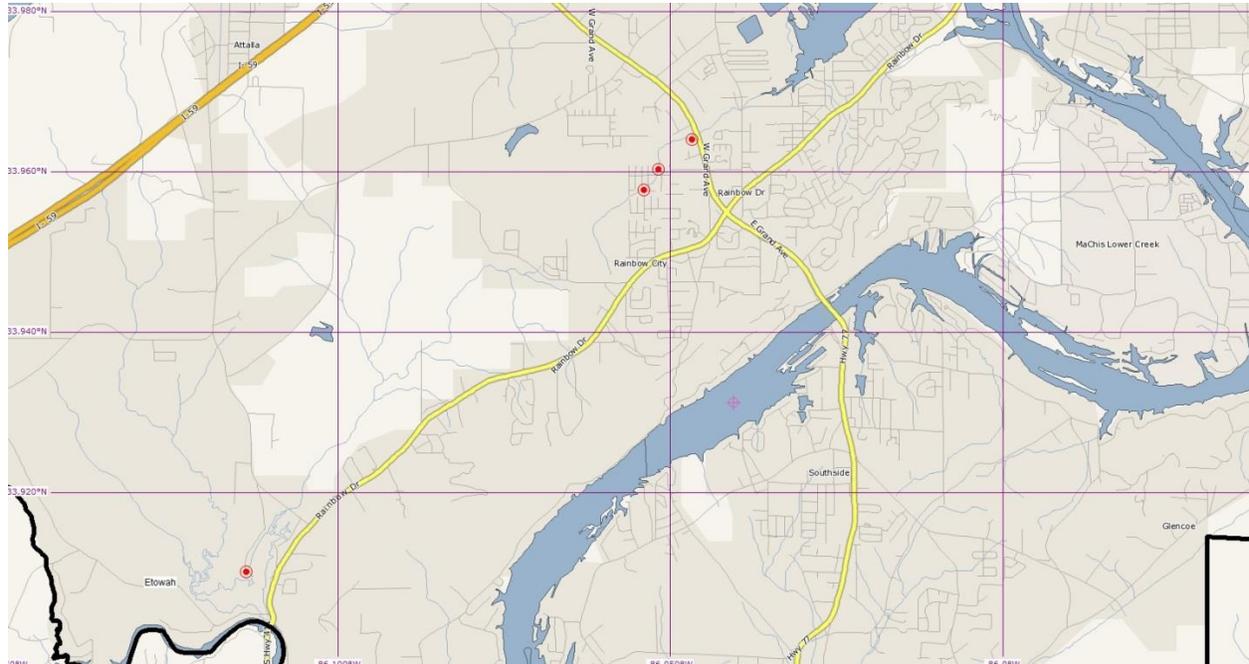
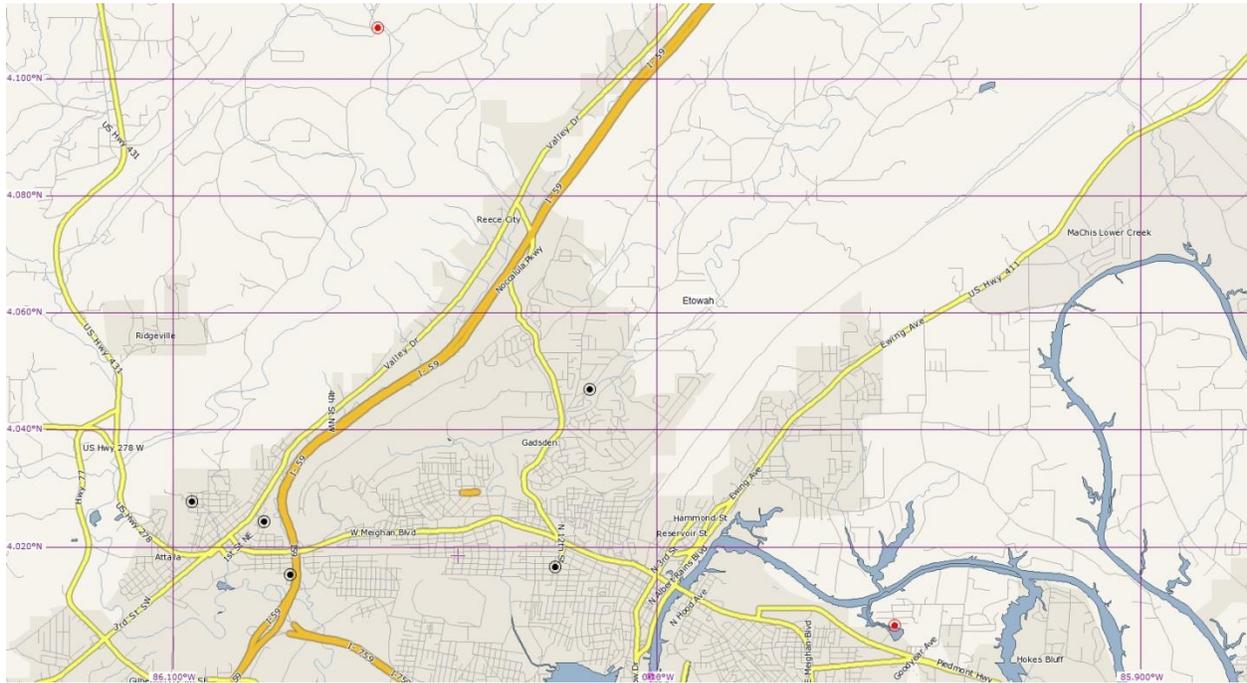


FIGURE 6.10 ETOWAH COUNTY UNINCORPORATED REPETITIVE LOSS PROPERTIES AND MAP

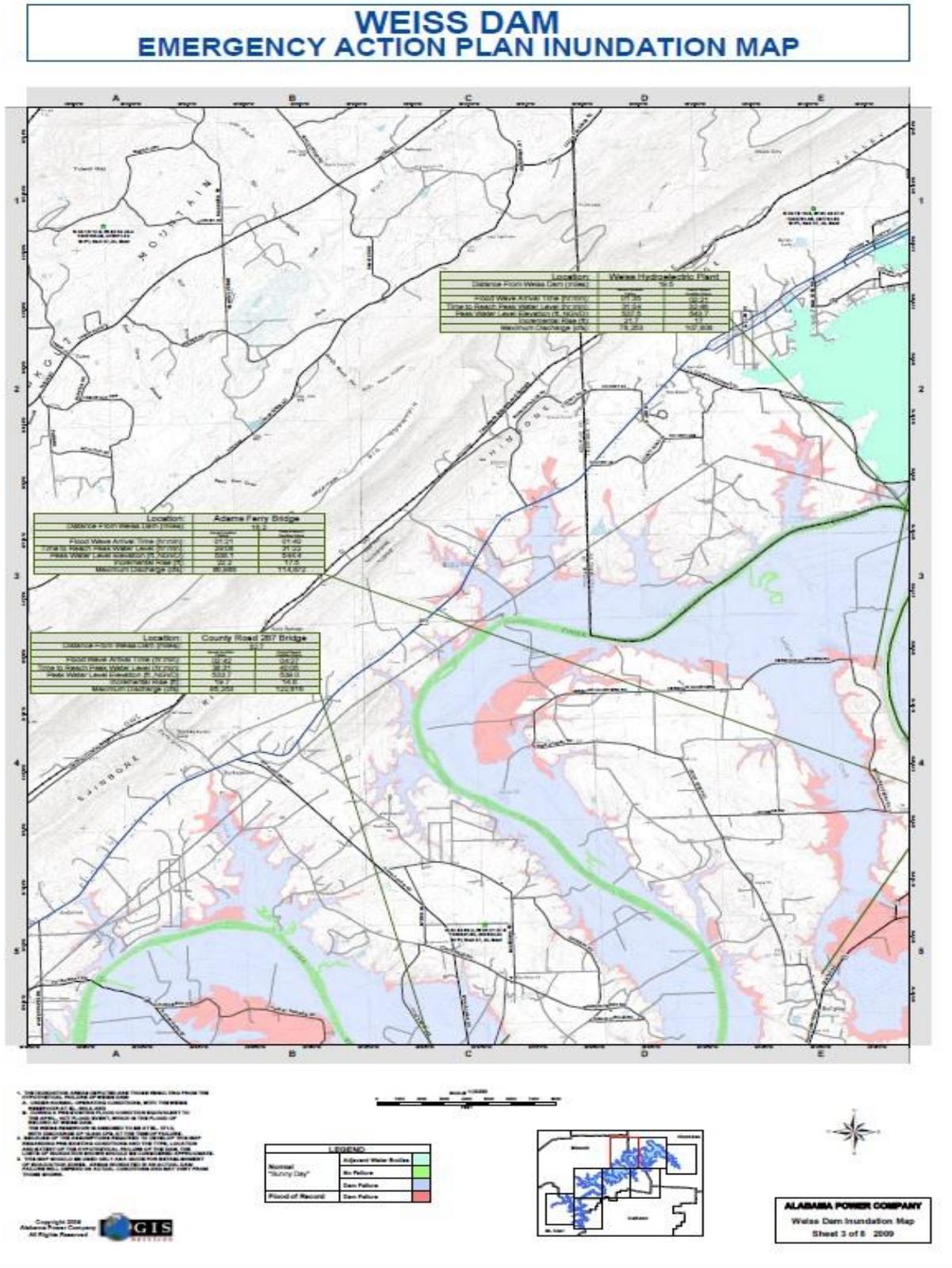
STREET	PROPERTY TYPE	DATE OF LOSS #1	DATE OF LOSS #2	DATE OF LOSS #3
Cox Gap Rd	Single Family	3/5/2003	11/23/2004	
Riverview Dr	Single Family	11/24/2004	1/6/2004	



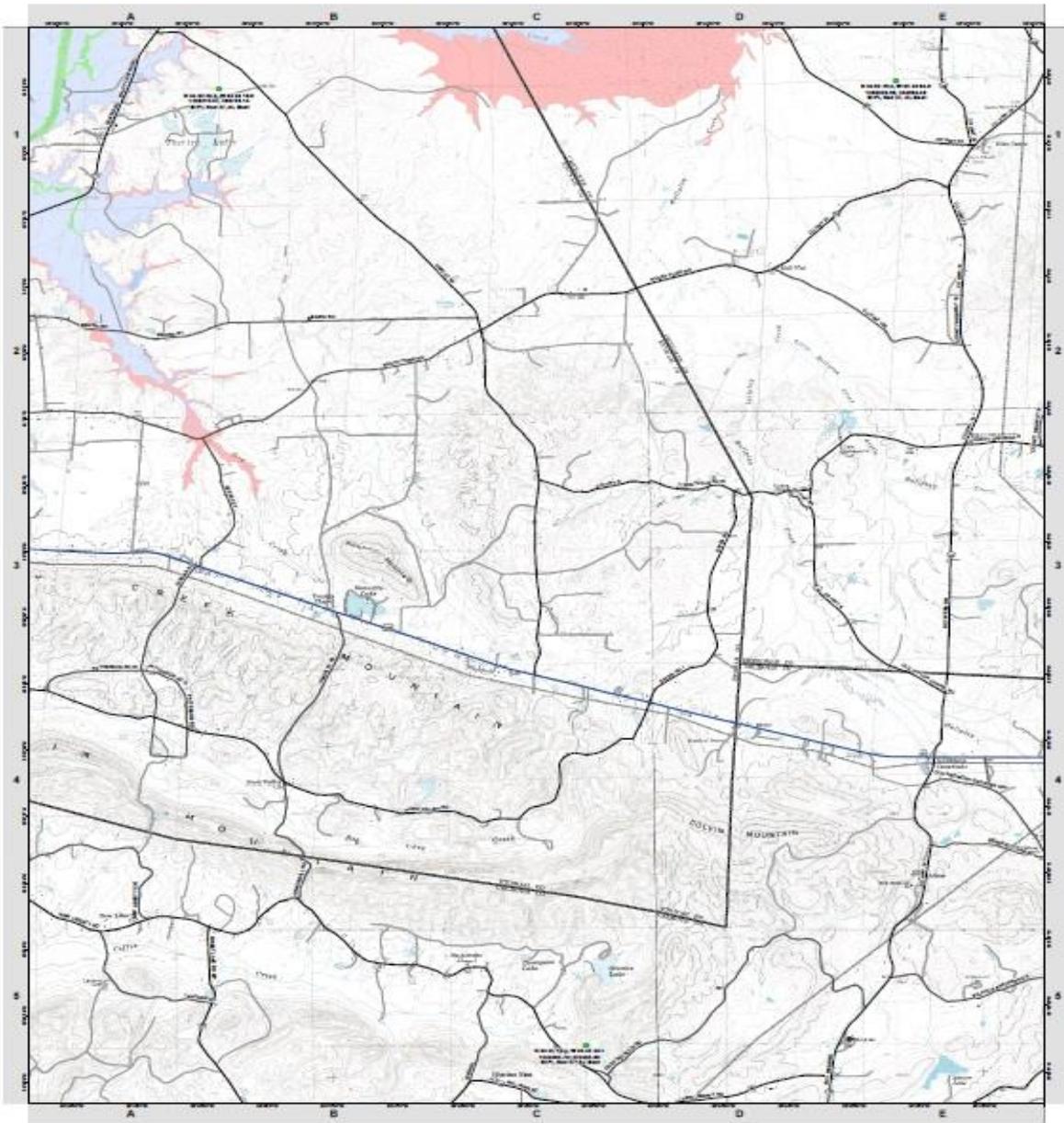
Weiss Dam

Alabama Power operates Weiss Dam located in Cherokee County, AL at 34.132342, -85.793891. Weiss Dam was the first dam built as a part of an Alabama Power Company construction program that further developed the Coosa River in the late 1950s and the 1960s. It became operational on June 5, 1961. It is constructed of gravity concrete and earth fill, and covers 30,798 feet. It's maximum height is 126 feet. A breach of Weiss Dam has never occurred. A dam break at Weiss Dam could have potentially dire consequences for Etowah County, including loss of life, injury, damage to critical infrastructure, loss of homes and businesses, and loss of power and utility services for a long period of time.

FIGURE 6.11 WEISS DAM FLOOD INUNDATION MAPS



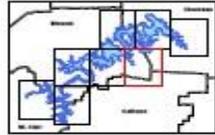
WEISS DAM EMERGENCY ACTION PLAN INUNDATION MAP



1. THE UNDESIGNED AREA OF THIS MAP TAKES MEASUREMENT FROM THE
 1985 ELEVATION PROFILE OF WEISS DAM.
 2. UNDER NORMAL OPERATIONS CONDITIONS, WITH THE WEISS
 DAM AT ITS DESIGN FLOOD CONTROL ELEVATION, THE
 FLOOD OF RECORD AREA IS THE FLOOD OF RECORD.
 3. THE FLOOD OF RECORD AREA IS THE FLOOD OF RECORD.
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 10. THE FLOOD OF RECORD AREA IS THE FLOOD OF RECORD.



LEGEND	
Normal "Steady State"	Adjacent Water Bodies
Flood of Record	500 Year Flood
	100 Year Flood
	500 Year Flood

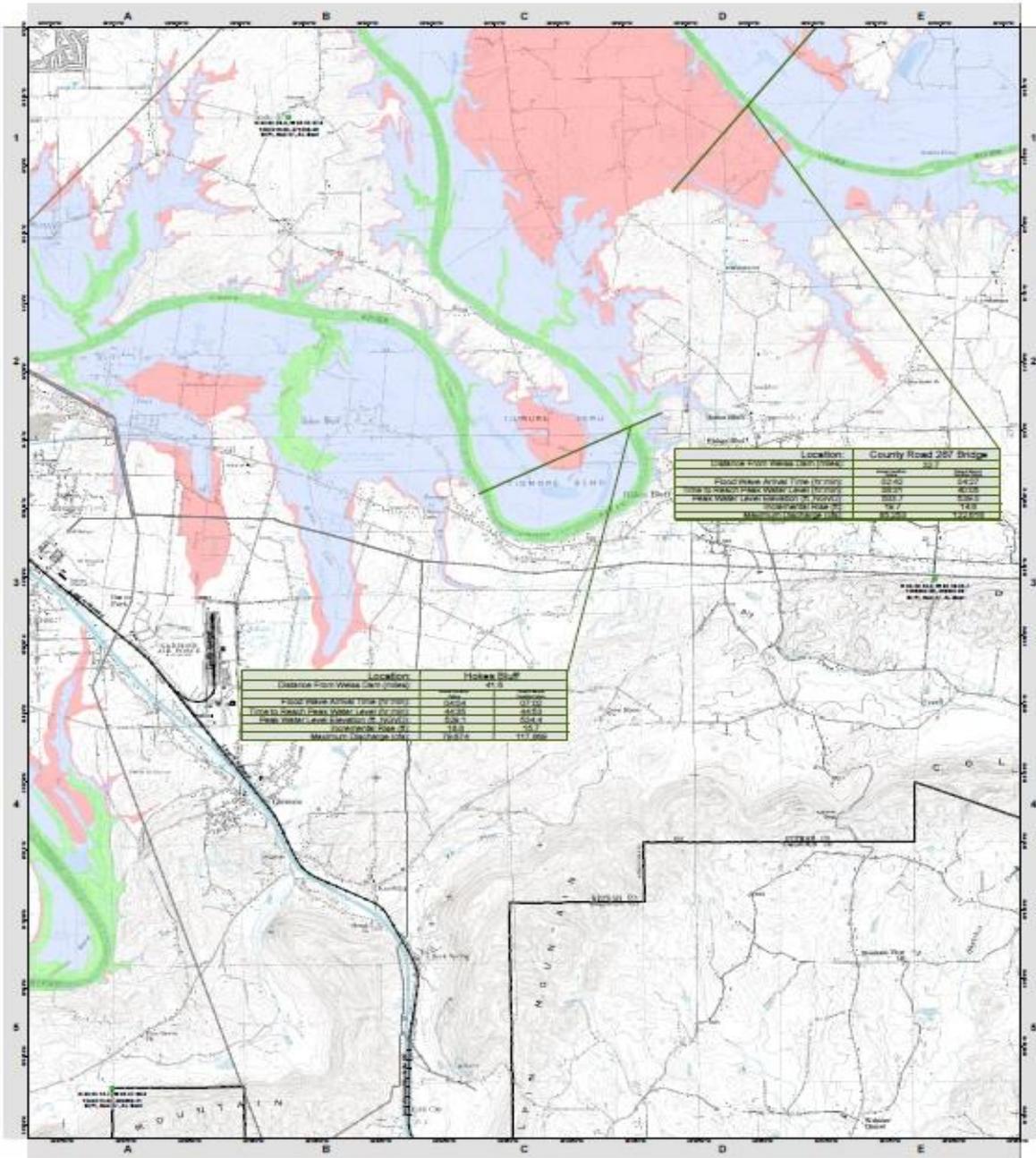


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ALABAMA POWER COMPANY
 Weiss Dam Inundation Map
 Sheet 4 of 8, 2009

WEISS DAM EMERGENCY ACTION PLAN INUNDATION MAP



1. THE INUNDATION AREA OR FLOOD ZONE THRESHOLD SHALL BE THE FLOOD OF RECORD FOR THE WEISS DAM. OPERATIONS COORDINATED WITH THE WEISS DAM OPERATOR AT ALL TIMES.
 2. OPERATIONS SHALL BE CONDUCTED TO MAINTAIN THE WEISS DAM AT A LEVEL THAT WILL PREVENT THE WEISS DAM FROM BREACHING.
 3. OPERATIONS SHALL BE CONDUCTED TO MAINTAIN THE WEISS DAM AT A LEVEL THAT WILL PREVENT THE WEISS DAM FROM BREACHING.
 4. OPERATIONS SHALL BE CONDUCTED TO MAINTAIN THE WEISS DAM AT A LEVEL THAT WILL PREVENT THE WEISS DAM FROM BREACHING.
 5. OPERATIONS SHALL BE CONDUCTED TO MAINTAIN THE WEISS DAM AT A LEVEL THAT WILL PREVENT THE WEISS DAM FROM BREACHING.



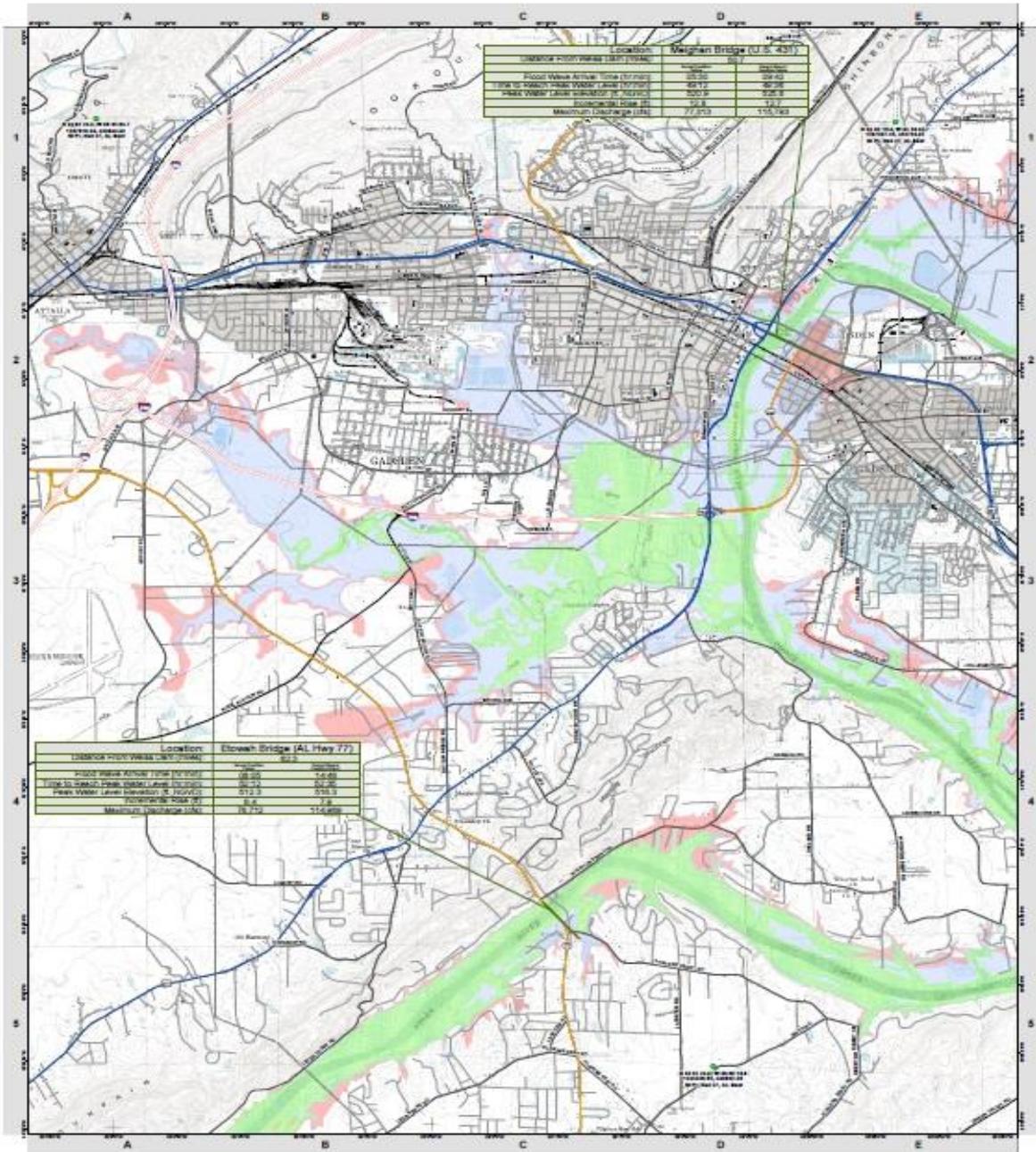
LEGEND	
Normal "Sunny Day"	Adjacent Water Bodies
Flood of Record	No Flood
	Dam Failure
	Dam Failure



ALABAMA POWER COMPANY
 Weiss Dam Inundation Map
 Sheet 5 of 8 2509

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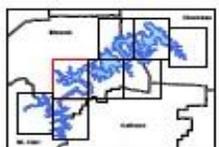
WEISS DAM EMERGENCY ACTION PLAN INUNDATION MAP



1. THE INUNDATION AREAS OF THIS MAP WERE DERIVED FROM THE
 2. SUPPLEMENTAL POLYMER OF WEISS DAM
 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.



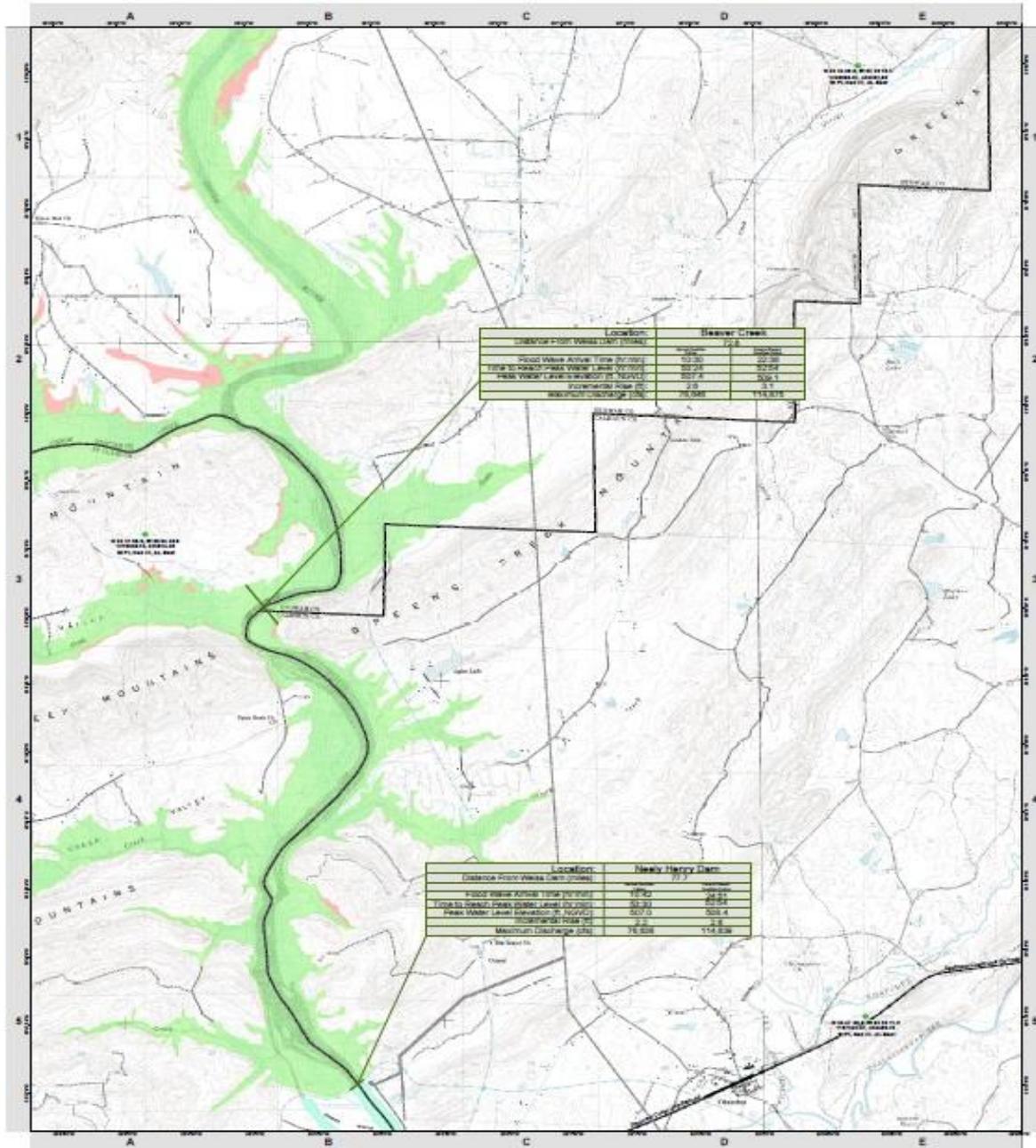
| LEGEND | |
|-------------------------|-----------------------|
| Normal "Flood-Free" Day | Adjacent Water Bodies |
| Flood of Record | No Failure |
| | Dam Failure |
| | Sea Failure |



ALABAMA POWER COMPANY
 Weiss Dam Inundation Map
 Sheet 6 of 8 2009

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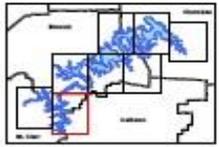
WEISS DAM EMERGENCY ACTION PLAN INUNDATION MAP



1. THE INUNDATION AREA SHOWN ON THIS MAP IS BASED ON THE ASSUMPTION THAT THE WEISS DAM WILL BE BREACHED AT THE LOCATION SHOWN ON THE MAP. THE INUNDATION AREA IS BASED ON THE ASSUMPTION THAT THE WEISS DAM WILL BE BREACHED AT THE LOCATION SHOWN ON THE MAP. THE INUNDATION AREA IS BASED ON THE ASSUMPTION THAT THE WEISS DAM WILL BE BREACHED AT THE LOCATION SHOWN ON THE MAP.



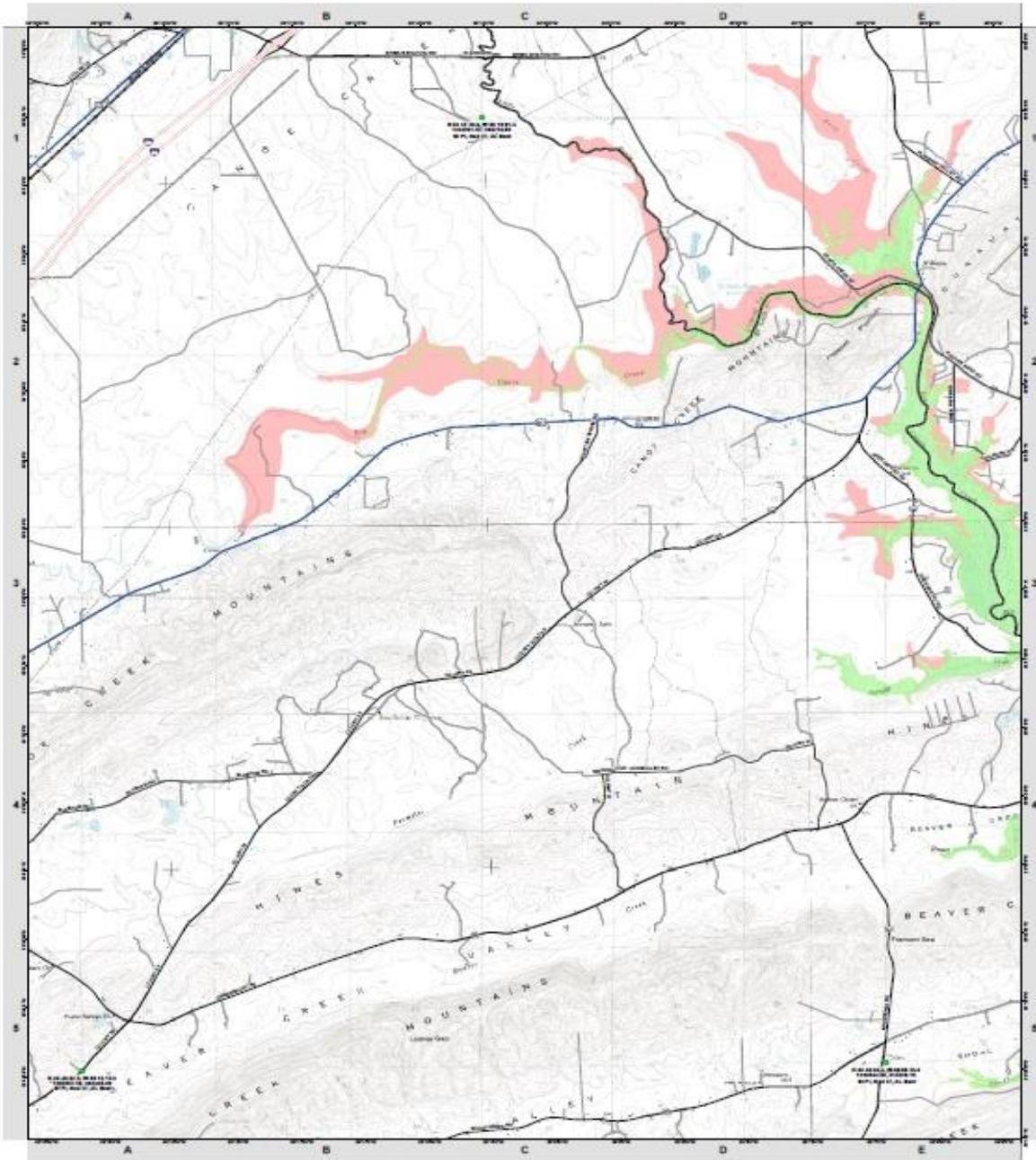
| LEGEND | |
|---------------------|------------------------|
| Normal "Sturdy Day" | Inundation Wave Shaded |
| | 100 Feet |
| | 200 Feet |
| | 300 Feet |
| | 400 Feet |
| | 500 Feet |
| | 600 Feet |
| | 700 Feet |
| | 800 Feet |
| | 900 Feet |
| | 1000 Feet |
| | 1100 Feet |
| | 1200 Feet |
| | 1300 Feet |
| | 1400 Feet |
| | 1500 Feet |
| | 1600 Feet |
| | 1700 Feet |
| | 1800 Feet |
| | 1900 Feet |
| | 2000 Feet |
| | 2100 Feet |
| | 2200 Feet |
| | 2300 Feet |
| | 2400 Feet |
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| | 9900 Feet |
| | 10000 Feet |



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Weiss Dam Inundation Map
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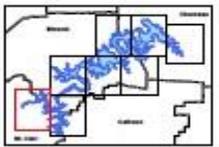
WEISS DAM EMERGENCY ACTION PLAN INUNDATION MAP



1. THE INUNDATION AREAS OF THIS MAP WERE DERIVED FROM THE
 2. HYDROLOGICAL MODELING OF WEISS DAM
 3. UNDER NORMAL OPERATING CONDITIONS WITH THE WEISS
 4. DAM AT ITS DESIGN FLOOD LEVEL FROM EQUILIBRIUM TO
 5. THE UPSTREAM END OF THE DAM. THESE AREAS ARE NOT TO BE
 6. CONSIDERED AS A GUARANTEE OF FLOOD PROTECTION.
 7. THE DESIGN FLOOD LEVEL IS BASED ON A 100-YEAR FLOOD
 8. AND IS SUBJECT TO REVISION AS NEW DATA BECOMES AVAILABLE.
 9. THIS MAP SHOULD BE USED ONLY AS A GUIDE FOR ESTIMATION
 10. OF FLOOD PROTECTION. OTHER FACTORS SUCH AS WIND, WAVE
 11. ACTION, AND OTHER LOCAL CONDITIONS MAY AFFECT FLOOD
 12. PROTECTION.



| LEGEND | |
|----------------------|-----------------------|
| Normal "Slurry Clay" | Adjacent Water Bodies |
| Flood of Record | No Flood |
| | Dam Failure |
| | Dam Failure |



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 Weiss Dam Inundation Map
 Sheet 8 of 8 2009

Floods are a direct threat to life and property. They cause death and injury when people are caught inside a home or car in a flooded area. River floods may also cause widespread damage to homes, infrastructure and vegetation. They may also damage the power infrastructure, rendering critical facilities, businesses, and homes without power for days or weeks. Floods also have the potential of washing out roads.

History of the Hazard in Etowah County

Records from NOAA's Storm Events Database show 35 flooding and flash flooding events since 1997. Reliable records before 1997 do not exist. Since 1997, floods and flash floods have accounted for zero deaths, one injury, and \$652,000 in property and crop damage. Given the averages over the 17 years of reliable data (0.05 injuries/year, \$38,000 damage/year), it is safe to assume Etowah County has endured three injuries since 1950 due to thunderstorms, and \$2.4 million in damage since 1950 due to floods.

Location

Areas adjacent to bodies of water, and areas with poor drainage are most at risk for flooding.

Extent

Etowah County has experienced 35 Flood events from January 1, 1997 to the present. The total Property Damage has totaled \$652,308.53 during this period. The total Crop Damage has totaled \$7,296.07 during the same period. The following text describes the location and extent of the most costly events:

- **April 6, 1886** – Coosa River crested at 525.10 feet. This is the highest crest in Etowah County's recorded history, and is considered a major flood. The river measured nearly a mile in width in some places. Residents in low-lying areas had to be evacuated (Goodson, 2010). Damage was estimated at \$100,000, or about \$2.6 million in today's dollar.
- **July 15, 1916** – Coosa River crested at 519.90 feet. This is considered a major flood.
- **January 2, 1933** – Coosa River crested at 517.50 feet. This is considered a major flood.
- **April 11, 1936** – Coosa River crested at 518.70 feet. This is considered a major flood.
- **February 16, 1946** – Coosa River crested at 517.20 feet. This is considered a major flood.
- **January 7, 1949** – Coosa River crested at 515.00 feet. This is considered a moderate flood.
- **March 31, 1951** – Coosa River crested at 516.10 feet. This is considered a moderate flood.
- **February 26, 1961** – Coosa River crested at 517.80 feet. This is considered a major flood.
- **April 5, 1977** – Coosa River crested at 514.40 feet. This is considered a moderate flood.
- **April 14, 1979** – Coosa River crested at 514.65 feet. This is considered a moderate flood.
- **February 17, 1990** – Coosa River crested at 515.43 feet. This is considered a moderate flood.
- **February 28, 1997** - Three to four feet of water was reported in Gadsden and Attalla. Streets were flooded in several locations during the event.
- **January 7, 1998** - Heavy rain was reported throughout Alabama. Rivers, creeks, and ditches were all out of their banks. Streets were closed due to water over the road.

Bridges were closed down due to rising waters. One death reported in Shelby County due to the rapidly moving waters. Multiple traffic accidents were reported due to hazardous driving conditions.

- **February 9, 1999** - Three inches of rainfall were reported across the city of Gadsden producing some flooding. Multiple cars were inundated and a few houses received water damage.
- **June 25, 1999** - Etowah County experienced three to six inches of rain during the course of a few hours. Hokes Bluff, Glencoe, Rainbow City, and Gadsden were considered the most at risk areas during the event. Multiple roads were impassable during the event. Impassable roads lead to stranded vehicles. The Fire Department helped rescue stranded motorists during the event. Multiple lightning strikes left several locations without power temporarily.
- **November 24, 2004** - Multiple roads were reported impassable during the event in Gadsden. Several streams and creeks rose above the banks causing multiple houses to flood. One minor landslide within the Whorton Gap Road area occurred. One bridge in Babe Jackson Road suffered major damage. The storm lasted several hours before the heaviest portion of rain ended.
- **July 5, 2005** - Rainbow City had one property with a partial roof collapse. One person was injured during the collapse. Multiple roads were impassable due to the rising water in Gadsden. Flood water entered multiple homes within Etowah County. The Fire Department rescued two passengers from a flooded vehicle.
- **July 27, 2005** - Gadsden had an impassable road at Meighan Boulevard. Multiple roadways throughout Etowah County were temporarily closed. The Park in Attalla City was completely flooded.
- **January 6, 2009** - Rainfall from the storm ranged from one to three inches near Interstate 20, and three to seven inches north of the Interstate. Over six inches were the highest rainfall totals in Etowah County. Flash flooding occurred north of Interstate 20, which later turned into river flooding that lasted multiple days. One dam in Gallant Community broke during the event, which produced 12 feet of flooding in the area. Twelve roads were impassable during the event and dozens of houses were evacuated.
- **October 12, 2009** – Several roads in Glencoe were flooded as heavy rainfall affected southern Etowah County during the morning. No major damage was done.
- **November 9-10, 2009** – Several roads throughout Etowah County were closed as heavy, prolonged rainfall associated with Tropical Storm Ida affected the area. No major structural damage was done.
- **March 10, 2010** – A storm system brought heavy rainfall to Etowah County during the evening hours. Numerous roads in the City of Southside were flooded. No major structural damage was reported.
- **March 9, 2011** – Heavy rainfall occurred during the afternoon, flooding roads on the western and eastern sides of the county. No major structural damage was reported.
- **July 14, 2011** – Heavy storms dumped 3”+ of rainfall, mainly affecting the City of Gadsden. Several roads were flooded and had to be closed during the event. Several motorists were stranded in their vehicles while trying to drive through flooded roadways. No injuries or major structural damage were reported.

- **September 5, 2011** – Prolonged, heavy rainfall associated with Tropical Storm Lee, created a flash flood situation across the county. No injuries or structural damage was reported with the flooding. However, wind and tornado damage occurred.
- **May 7, 2013** – Heavy prolonged rainfall caused the Coosa River to slightly exceed flood stage. It crested at 511.91 on 5/7/13. Minor property damage was reported. One resident at Lawson Gap Rd in the Mountainboro Community requested sandbags to protect against stream flooding.
- **April 7, 2014** – Strong thunderstorms caused flooding to occur on the northern and eastern sides of the county. The Etowah County Road Department closed several roads in these areas. No major structural damage was reported.

Probability of the Hazard in Etowah County

Flood probability and magnitude are highly location-specific. Truly accurate determinations of flood probability require site-specific data gathering that is beyond the scope of this hazard profile. Countywide, due to development and weather patterns, floods are rated as a high hazard for the county and its municipalities. Etowah County averages one flooding event each year.

| Probability Ranking | Percent chance of occurrence in any year |
|---------------------|--|
| Low | 0% - 33% |
| Moderate | 34% - 66% |
| High | 67% - 100% |

The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The table above represents the scale of probability.

Flood Vulnerability in Etowah County

Structures and systems adjacent to bodies of water are most vulnerable to flooding. Most areas of the county are not vulnerable to flooding. For the purpose of this vulnerability assessment, data from FEMA's Flood Map Service Center will be used to identify key structures which have a 1% chance of being flooded every year.

Urban areas are also vulnerable to overland flooding due to poor drainage. This can close roads, damage structures, and prevent or delay essential services from completing their jobs.

The following is a summary of flood vulnerability for each jurisdiction:

Altoona:

The City of Altoona has a population of 933 people, living in 317 households. The most vulnerable populations to floods in the Town of Altoona would be those located in the 100-year floodplain.

None of the Town of Altoona's key facilities have a 1% or greater risk of being flooded every year.

Overland flooding is an issue in parts of Altoona. The following areas have been identified as having draining issues:

- 2nd Street, College Street and 6th Avenue

A major flood in the Town of Altoona has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the Town of Altoona could generate \$51,573 (adjusted for inflation) in financial losses.

Attalla:

The City of Attalla has a population of 6048 people, living in 2442 households. The most vulnerable populations to floods in the City of Attalla would be those located in the 100-year floodplain.

The following key facility in the City of Attalla is vulnerable to flooding:

- Attalla Public Works Department

Overland flooding is an issue in parts of downtown and west Attalla. The following areas have been identified as having draining issues:

- Hannah Avenue
- Burke Avenue
- 1st Street
- 5th Avenue
- Cleveland Avenue
- 3rd Street
- Attalla Country Club
- Attalla City Park
- American Legion Fair Grounds

A major flood in the City of Attalla has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges. City of Attalla Public Works assets would be at risk of flood damage due to their primary facility's location in the 100-year flood zone.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Attalla could generate \$46,330 (adjusted for inflation) in financial losses.

Etowah County:

While the assets of the local government of Etowah County would aid in response and recovery missions throughout the county, this section will focus on the people and assets located in unincorporated areas of the county. The unincorporated portion of Etowah County has a total population of 29,966 people, living in 11,061 households. The most vulnerable populations to floods would be those located in the 100-year floodplain.

No assets owned by the Etowah County Commission or key facilities in the unincorporated areas of Etowah County have a 1% or greater risk of being flooded every year. Overland flooding is an issue in some rural parts of Etowah County. The following areas have been identified as having draining issues:

- Coosa Drive in eastern Etowah County
- Adams Road in northeastern Etowah County
- Cox Gap Road in northern Etowah County
- Owls Hollow Road in eastern Etowah County
- Murphree Valley Road in western Etowah County
- Bristow Cove Road in northern Etowah County
- Jackson Trail in northern Etowah County

A major flood Etowah County has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the unincorporated areas of Etowah County could generate \$51,573 (adjusted for inflation) in financial losses.

Gadsden:

The City of Gadsden has a population of 36,856 people, living in 15,717 households. The most vulnerable populations to floods in the City of Gadsden would be those located in the 100-year floodplain.

The following key facilities in the City of Gadsden are vulnerable to floods:

- Eura Brown Elementary School
- Coosa Christian School
- George W. Floyd Elementary School
- Gadsden Fire Station #4
- Gadsden Fleet Management Department
- Gadsden Water Works & Sewer Board
- Koch Foods (Etowah County’s 7th Largest Employer)
- Riverview Regional Medical Center

Overland flooding is an issue in various parts of Gadsden. The following areas have been identified as having draining issues:

- 6th Street
- Oak Park
- South 4th Street
- Herzberg Circle
- Herzberg Avenue
- Forrest Avenue
- Goldenrod Avenue
- South Gadsden
- Arrowhead Drive
- East Broad Street
- Stonewall Avenue
- Mill Village
- Belleview Drive
- Monte Vista Drive
- Agricola Shopping Center
- Etowah Park

A major flood in the City of Gadsden has the possibility of creating numerous casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges. City of Gadsden assets would be at risk of flood damage due to their Fleet Management facility's location in the 100-year flood zone. Gadsden Fire Station #4 could be put out of service due to flooding at Black Creek. Riverview Regional Medical Center could be forced to evacuate lower floors should the Coosa River flood. Two of Etowah County's major employers, Riverview Regional Medical Center and Koch Foods, could have business negatively affected due to flooding and their locations inside the floodplain. Additionally, a hazardous materials situation could occur if flooding affected either facility.

The Gadsden City Board of Education could be faced with accommodating displaced students at Eura Brown Elementary School should flooding occur. Additionally, administrators at Coosa Christian School could be faced with the same problem. Both schools are located within the flood zone.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Gadsden could generate \$46,330 (adjusted for inflation) in financial losses.

Glencoe:

The City of Glencoe has a population of 5160 people, living in 2129 households. The most vulnerable populations to floods in the City of Glencoe would be those located in the 100-year floodplain.

None of the City of Glencoe's key facilities have a 1% or greater risk of being flooded every year.

Overland flooding is an issue in parts of Glencoe. The following areas have been identified as having draining issues:

- Larry Street
- Larrydale Drive
- Macon Drive
- Glenport Avenue
- Taylor Road

A major flood in the City of Glencoe has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Glencoe could generate \$51,573 (adjusted for inflation) in financial losses.

Hokes Bluff:

The City of Hokes Bluff has a population of 4286 people, living in 1747 households. The most vulnerable populations to floods in the City of Atalla would be those located in the 100-year floodplain.

None of the City of Hokes Bluff's key facilities have a 1% or greater risk of being flooded every year.

Overland flooding is an issue in parts of Hokes Bluff. The following areas have been identified as having draining issues:

- Eastview Avenue

A major flood in the City of Hokes Bluff has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Hokes Bluff could generate \$51,573 (adjusted for inflation) in financial losses.

Rainbow City:

The City of Rainbow City has a population of 9602 people, living in 4113 households. The most vulnerable populations to floods in the City of Rainbow City would be those located in the 100-year floodplain.

None of the City of Rainbow City's key facilities have a 1% or greater risk of being flooded every year.

Overland flooding is an issue in parts of Rainbow City. The following areas have been identified as having draining issues:

- Gilmer Lane
- Brown Avenue
- Westminster Drive
- Whorton Creek
- Dry Creek

A major flood in the City of Rainbow City has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Rainbow City could generate \$54,719 (adjusted for inflation) in financial losses.

Reece City:

The Town of Reece City has a population of 653 people, living in 258 households. The most vulnerable populations to floods in the Town of Reece City would be those located in the 100-year floodplain.

None of the Town of Reece City's key facilities have a 1% or greater risk of being flooded every year.

Overland flooding is an issue in parts of downtown and west Attalla. The following areas have been identified as having draining issues:

- Nichols Road
- Donald Road
- Higdon Road
- Crudup Road
- US Highway 11 (500 block)

A major flood in the Town of Reece City has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the Town of Reece City could generate \$51,573 (adjusted for inflation) in financial losses.

Ridgeville:

Based on history and data from the FEMA Flood Map Service Center, a flood is unlikely to occur anywhere within the Town of Ridgeville. However, overland flooding has been an issue along Main Street.

Sardis City:

The Town of Sardis City has a population of 1704 people, living in 657 households. The most vulnerable populations to floods in the Town of Sardis City would be those located in the 100-year floodplain.

None of the Town of Sardis City's key facilities have a 1% or greater risk of being flooded every year. Overland flooding has not been identified as a major issue in the Town of Sardis City.

A major flood in the Town of Sardis City has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the Town of Sardis City could generate \$51,573 (adjusted for inflation) in financial losses.

Southside:

The City of Southside has a population of 8412 people, living in 3228 households. The most vulnerable populations to floods in the City of Southside would be those located in the 100-year floodplain.

None of the City of Southside's key facilities have a 1% or greater risk of being flooded every year.

Overland flooding is an issue in parts of Southside. The following areas have been identified as having draining issues:

- Hall Drive
- Robertson Street West
- Cedar Bend Road (at Miller Creek)
- Cedar Bend Road (at Richland Way)
- Abernathy Circle
- Island Way
- Vista Trail
- Valley Drive
- South Valley Road (Berkley Hills area)
- Rosewood Lane
- Mountainview Drive
- Robertson Street East
- Watson Street

A major flood in the City of Southside has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental services due to power and transportation challenges.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Southside could generate \$51,573 (adjusted for inflation) in financial losses.

Walnut Grove:

The Town of Walnut Grove has a population of 698 people, living in 321 households. The most vulnerable populations to floods in the Town of Walnut Grove would be those located in the 100-year floodplain.

The following key facilities in the Town of Walnut Grove are vulnerable to flooding:

- Walnut Grove Town Hall
- Walnut Grove Volunteer Fire Department
- Walnut Grove Water Works

Overland flooding has not been identified as an issue in the Town of Walnut Grove.

A major flood in the Town of Walnut Grove has the possibility of creating some casualties. In addition, utility services could be disrupted for a long period of time, necessitating the opening of shelters. A major flood could also disrupt essential governmental as the Town Hall, Fire Department, and Water Works are all in the flood zone. Town business would have to be relocated to another facility if the Town Hall flooded. Fire service could have assets damaged or destroyed. Further, the Town of Walnut Grove would likely have to rely on mutual aid to provide fire and rescue service should the fire department be flooded.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major flood in the City of Walnut Grove could generate \$51,573 (adjusted for inflation) in financial losses.

Winter Storms

Nature of the Hazard in Etowah County

In this plan, winter storms will refer to storms which produce frozen precipitation (snow, sleet, freezing rain, and graupel). Hail is not included. Winter storms do not always occur in winter. The term winter storm will be a catch-all term to refer to storms which produce frozen precipitation.

Due to Alabama's climate, winter storms are fairly uncommon. They most often occur in the winter months, between December and March. Due to Alabama's low latitude, a series of events must come together to produce winter storms. Cold air must be in place from the arctic jet stream, or through Cold Air Damming (CAD). CAD occurs, "occurs when a ridge of high pressure sets up near the east coast of the U.S., east of the Appalachians. Air normally flows clockwise around a high pressure area, when the wind is in balance. But, if the air is cool and stable, the air flowing around the south side of the high (from the east) can't make it over the Appalachians. Balance no longer exists, and air begins to flow directly from high to low pressure, instead of clockwise. Therefore, cold air gets trapped on the east side of the mountains, and flows rapidly southwest. The heavy, cold air actually enhances the high pressure ridge east of the mountains. So, air from the Northeast U.S. gets an express to the Southeast (Alabama Weather Blog, 2008). Moisture must be also present to trigger the frozen precipitation.

Winter storms are a direct threat to life and property. They can cause death and injury through exposure to extreme cold, especially if power systems are knocked out. They also create hazardous travel conditions which result in automobile wrecks. Winter storms can frequently knock out power to an area for long periods of time. They can knock down trees and cause roofs to collapse. Winter storms also tie up emergency response resources needed to respond to automobile wrecks, hazardous roads, and medical calls.

Winter storms are a low frequency, high impact hazard in Etowah County. When they occur, they often cause businesses and schools to shut down for days. Due to their infrequency, local resources are not widely available to respond to the needs generated by winter storms.

History of the Hazard in Etowah County

Records from NOAA's Storm Events Database show 15 winter storm related events between January 1, 1996 and December 31, 2014. Reliable data on winter storms injuries, deaths, and damages before 1996 does not exist. Since 1996, winter storms have accounted for zero deaths, zero injuries, and \$71,000 in property and crop damages. Given the averages over the 19 years of reliable data (0 injuries/year, \$3700 damage/year), it could be assumed that Etowah County has endured no injuries or deaths since 1950 due to winter storms, and \$236,000 in damage since 1950 due to winter storms. However, the occurrence of winter storms is so infrequent, and the consequences can be so severe, this is probably not accurate. For example, the March 1993 winter storm generated nearly \$26 million in public emergency work costs (FEMA, 2013), and caused over 400,000 power outages which took over a week to restore (Alabama Power).

Location

All areas of Etowah County are equally at risk for winter storms.

Extent

The following text describes some of the more extreme winter storm events in recent Etowah County history.

- **March 12, 1993** - More than 15 inches of snow was recorded in Etowah County. Four wheel drive vehicles were unable to travel in the conditions. Even the National Guard found many roads impassable. Bread and milk were out of stock. Most of the population was without power. Due to unreliable or non-existent data, the total damage done by this storm is unknown. However, this is likely the most damaging winter storm in Etowah County's recorded history.
- **January 6, 1996** - A winter storm brought a mixture of freezing rain, sleet, and snow to the northern two-thirds of Alabama. Precipitation began as freezing rain and sleet but quickly changed to snow. The precipitation coated roads and caused serious travel problems across the county. Total damage related to this storm was approximately \$11,000.
- **February 1, 1996** - Multiple chicken houses in the northern part of the state collapsed under the weight of ice and snow. Ice and snow accumulations varied widely with some of the highest amounts reported in the 1 to 3 inch range. Total damage related to this storm was approximately \$15,000.
- **February 4, 1998** - A winter snow storm moved over the northeast part of the state early Wednesday morning. Snowfall totals ranged from approximately 2-6 inches over the region. There were a few accidents due to slick roads. There were some power lines down due to the heavy wet snow throughout the area. Total damage related to this storm was approximately \$3,000.
- **December 23, 1998** - A winter storm brought a mixture of freezing rain, sleet, and rain to the northern half of Alabama. The precipitation began in the morning of the 23rd and lasted until afternoon on the 24th. The temperatures during this event hovered around the freezing mark and remained slightly above freezing long enough for most of the precipitation to fall as rain. Liquid equivalent precipitation measured one to three inches throughout the entire event. Ice accumulations up to one quarter inch occurred briefly during the overnight and early morning hours. These accumulations were generally confined to tree tops, bridges, other elevated surfaces, and higher elevations. Northern Jefferson and Western Etowah counties both reported some trees down along with many branches. Total damage related to this storm was approximately \$6,000.
- **January 28, 2000** - A mixture of rain, sleet, and snow began falling during the early morning hours on the 28th. Snow accumulations were rather light, with most areas receiving less than 1 inch. The precipitation changed to mostly rain during the daylight hours on the 28th but started to mix with freezing rain and sleet again in the nighttime hours. Although the precipitation was mainly light, trees were becoming coated with ice across higher elevations of Marshall, Etowah, and Calhoun. This lasted into the morning hours on the 29th. Several trees succumbed to the weight of the ice. Total damages related to this storm were \$15,000.
- **December 6, 2002** - A weak winter storm occurred across northern Alabama mainly during the early morning hours of February 6th. The precipitation began as rain during the evening of February 5th and changed over to a mixture of freezing rain, sleet, and snow just after midnight in many locations. The precipitation changed back to rain before

ending the afternoon of the 6th. One quarter inch of ice accumulated on many elevated surfaces such as trees, bridges, and power lines as the temperatures dipped below freezing. Several tree limbs, trees, and power lines fell due to bearing the extra weight of the ice. Many elevated road surfaces and bridges were iced over briefly causing several accidents. The impact of this winter event was not extensive because it lasted only a short period of time and the icy conditions occurred during the late night hours in most locations. Total damage related to this storm was approximately \$1,000.

- **January 28, 2005** - Strong Cold Air Damming along the Southern Appalachians provided a continuous source of surface cold and dry air from the east. This colder air, in combination with an approaching storm system with abundant gulf moisture, changed the rain to freezing rain across a large part of eastern Alabama. Exposed surfaces had ice accumulation to at least one quarter of an inch with a few locations reporting ice accumulations of around one half inch. Several trees, tree limbs, and power lines were knocked down and many of the fallen trees temporarily blocked roadways. The rain changed over to freezing rain just after sunset on January 28. Icing conditions started in the early evening hours and tapered off to no additional significant accumulations early on January 29. Total damage related to this storm was \$20,000.
- **December 25, 2010** - A surface low in the northern Gulf of Mexico along with an upper level disturbance moving southeastward from the Great Plains contributed to heavy snowfall on Christmas Day in Alabama, resulting in the first White Christmas for much of the area. Precipitation began during the early morning hours in northwest Central Alabama and spread eastward through the day. Many locations saw precipitation begin as rain and change over to snow. In some places, this change over was brief. An average snowfall accumulation of 2.5 inches occurred across the county with isolated amounts of 3.0 inches. The incident occurred in conjunction with a water main break in Attalla. Total damage numbers for this event have not been tabulated as of this writing.
- **January 9, 2011** - As a low pressure system moved across the northern Gulf of Mexico on Sunday January 9th, moisture pushed northward into Central Alabama, interacting with cold air already in place across the area. The combination of moisture and cold air brought a wintry mix of precipitation to most of Central Alabama. As the strong storm system neared the area, several bands of wintry precipitation moved northward across the area, sometimes becoming quite heavy, with estimated precipitations rates over 1 inch an hour. As snow and ice began to accumulate, travel conditions quickly became hazardous. Several reports of thundersnow were also noted. Snow accumulations ranged from 2 to 7 inches, which was measured near Noccalula Falls. Total damage numbers for this event have not been tabulated as of this writing.
- **February 9, 2011** - A low pressure system formed off the Texas coast in the Gulf of Mexico during the overnight hours of Tuesday, February 8th. This surface low tracked eastward along the coast during the morning of Wednesday, February 9th, dragging moisture northward from the Gulf of Mexico and pulling cold air in from the north. The combination of the moisture and cold air brought snowfall to much of Central Alabama. Snowfall totals average 1.9 inches across the county. Locations in the western portion of the county received up to 2.8 inches. Total damage numbers have not been tabulated as of this writing.
- **February 11 – 12, 2014** - A strong arctic air mass pushed southward across much of the southeastern United States on Monday, February 10, behind a strong cold front, and

temperatures struggled to warm into the lower 30s. Monday afternoon across north Central Alabama. Monday evening, rain spread northward from the Gulf of Mexico over the cold airmass at the surface over Central Alabama. As temperatures fell below freezing early Tuesday morning, February 11, a mix of freezing rain and snow occurred across locations generally north of the Interstate 20 corridor. Precipitation ended from west to east by mid-morning on Tuesday, but temperatures remained in the 30s across the north and lower 40s across the south through the day. By Tuesday evening, surface high pressure settled across the northeastern United States, resulting in cold air damming along the East Coast and around the southern end of the Appalachian Mountains. This reinforced the cold air at the surface across much of Central Alabama. Meanwhile, a surface low strengthened in the northwestern Gulf of Mexico as the first of two mid-level troughs moved toward the area. Moisture spread back northward, but with surface temperatures just above freezing for much of the area, a cold light rain prevailed Tuesday night. Wednesday morning, February 12, cold air damming strengthened across east Central Alabama, leading to widespread freezing rain and ice accumulations of one quarter of an inch to one half of an inch. This resulted in significant damage in Mt. Cheaha State Park. Areas of light precipitation continued through the day on Wednesday across Central Alabama, at times producing isolated sleet and freezing rain with light accumulations. Temperature profiles gradually cooled and precipitation transitioned from freezing rain and sleet to snow late Wednesday afternoon. As a strong upper level low moved across the area, a deformation zone developed and crossed the northern half of Central Alabama, from west to east, dropping significant amounts of snow Wednesday night. Additional snow bands developed late Wednesday night, producing additional snow across portions of the area. During the early morning hours on Tuesday, February 11, rain transitioned to snow across Etowah County, with snowfall continuing for around 5 hours. Snowfall totals of 2 inches were reported. Total damage numbers have not been tabulated as of this writing. Precipitation spread across Etowah County on Wednesday morning, with temperatures hovered just above freezing until approximately 2:00 pm. The extreme northern portions of the county did experience a brief period of light freezing rain, however no accumulations or impacts were observed. As temperatures fell in the early afternoon, sleet began and quickly transitioned to snow. Additional snow accumulations of up to 3 inches were observed in parts of the county.

Probability of the Hazard in Etowah County

Information obtained from the National Climatic Data Center was used to determine the frequency and probability of winter storm events for Etowah County.

The Hazard Mitigation Planning Committee ranked probability of occurrence by the number of events over a specified time frame. The following table represents the scale of probability:

| Probability Ranking | Percent chance of occurrence in any year |
|---------------------|--|
| Low | 0% - 33% |
| Moderate | 34% - 66% |
| High | 67% - 100% |

Etowah County and the municipalities within its borders have a high (68%) probability of occurrence for this type of event.

Winter Storm Vulnerability in Etowah County

Winter storms have an equal chance of striking any place in the county. Unlike tornadoes or severe thunderstorms, winter storm impacts are generally widespread and affect most of the population. The most vulnerable populations will be those that are dependent on electrical power for heating and medical purposes. Refer to Figure 6.6 (Tornado/Severe Thunderstorm/Winter Storm Vulnerability in Etowah County) for a statistical breakdown of this information.

The following is a summary of winter storm vulnerability for each jurisdiction:

Altoona:

The Town of Altoona has a population of 933 people, living in 317 households. All 317 households are susceptible to winter storms. Most vulnerable would be those who depend upon electrical power for heating and medical purposes.

The following key facilities in the Town of Altoona are vulnerable to winter storms:

- Altoona Town Hall
- Altoona Fire Department
- Altoona Police Department
- Altoona Water & Sewer Board Assets
- AMED Ambulance Service Headquarters
- West End Elementary School

A major winter storm has the possibility of disrupting essential services throughout the Town of Altoona, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Altoona Fire, Police, and AMED Ambulance may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Altoona Water and Sewer Board. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Attalla:

The City of Attalla has a population of 6048 people, living in 2442 households. All 2442 households are susceptible to winter storms. Most vulnerable would be those who depend upon electrical power for heating and medical purposes.

The following key facilities in the City of Attalla are vulnerable to winter storms:

- Attalla City Hall
- Attalla Elementary School
- Attalla Fire Department – Station 1
- Attalla Fire Department – Station 2
- Attalla Fire Department – Station 3
- Attalla Police Department
- Attalla Public Works Department
- Attalla Water & Sewer Board Assets
- Etowah Middle School
- Etowah High School

A major winter storm has the possibility of disrupting essential services throughout the City of Attalla, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Attalla Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Attalla Water and Sewer Board. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Etowah County:

While the assets of the local government of Etowah County would aid in response and recovery missions throughout the county, this section will focus on the people and assets located in unincorporated areas of the county. The unincorporated portion of Etowah County has a total population of 29,966 people, living in 11,061 households. All 11,061 households are susceptible to winter storms. Most vulnerable would be those who depend upon electrical power for heating and medical purposes.

The following key assets owned by the Etowah County Commission, and facilities in the unincorporated areas of Etowah County are vulnerable to winter storms:

- Ballplay 1 Volunteer Fire Department
- Ballplay 2 Volunteer Fire Department

- Big Wills Water & Fire Pro Authority
- Black Creek Fire Department
- Carlisle Elementary School
- Coates Bend Volunteer Fire Department
- Crems Water & Fire Pro Authority
- Douglas Water & Fire Pro Authority
- Duck Springs Elementary School
- Egypt Volunteer Fire Department
- Etowah County Courthouse
- Etowah County Sheriff's Office/Judicial Building/Detention Center
- Etowah County Engineering Department – Main Building
- Etowah County Engineering Department – Attalla Shop
- Etowah County Engineering Department – Gadsden Shop
- Fords Valley & Highway 278 Water Cooperative
- Gallant Volunteer Fire Department
- Gaston School
- Highland Elementary School
- Highland Volunteer Fire Department
- Highland Water & Fire Pro Authority
- Ivalee Elementary School
- Ivalee Volunteer Fire Department
- Keener Volunteer Fire Department
- Lookout Mountain Volunteer Fire Department
- Mountainboro Volunteer Fire Department
- New Union Volunteer Fire Department
- Northeast Etowah County Water Cooperative
- Sand Valley Volunteer Fire Department
- Tidmore Bend Volunteer Fire Department
- Tillison Bend Water & Fire Pro Authority
- West Etowah Water & Fire Pro Authority
- West Etowah Volunteer Fire Department

- Whitesboro Elementary School
- Whorton Bend Water & Fire Pro Authority
- Whorton Bend Volunteer Fire Department

A major winter storm has the possibility of disrupting essential services throughout the unincorporated areas of Etowah County, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Fire, police, and emergency medical services may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the various water authorities. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Based on estimates from the 2010 Etowah County Multi-Jurisdictional Hazard Mitigation Plan, a major winter storm in Etowah County could generate \$103,419 (adjusted for inflation) in financial losses.

Gadsden:

The City of Gadsden has a population of 36,856 people, living in 15,717 households. All 15,717 households are susceptible to winter storms. Most vulnerable would be those who depend upon electrical power for heating and medical purposes.

The following key facilities in the City of Gadsden are vulnerable to winter storms:

- Adams Elementary School
- Eura Brown Elementary School
- Coosa Christian School
- Donehoo Elementary School
- Episcopal Day School
- George W. Floyd Elementary School
- Gadsden City Hall
- Gadsden City High School
- Gadsden Fire Station #1
- Gadsden Fire Station #2

- Gadsden Fire Station #4
- Gadsden Fire Station #5
- Gadsden Fire Station #6
- Gadsden Fire Station #7
- Gadsden Fire Station #8
- Gadsden Fire Station #9
- Gadsden Fleet Management Department
- Gadsden Middle School
- Gadsden Police Department
- Gadsden Public Works Department
- Gadsden Regional Medical Center
- Gadsden State Community College
- Gadsden Water Works & Sewer Board
- Gadsden/Etowah County Emergency Operations Center
- Goodyear Tire & Rubber Company (Etowah County's Largest Employer)
- Keystone Foods (Etowah County's 10th Largest Employer)
- Koch Foods (Etowah County's 7th Largest Employer)
- Litchfield Middle School
- R.A. Mitchell Elementary School
- Northeast Alabama Regional Airport
- Riverview Regional Medical Center
- Saint James Catholic School
- Emma Sansom Middle School
- Striplin Elementary School
- Walnut Park Elementary School
- Ray Thompson Elementary School

A major winter storm has the possibility of disrupting essential services throughout the City of Gadsden, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Gadsden Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Gadsden Water and Sewer Board. Schools may be out of session for long periods of time. Hospitals could be forced to rely on generator power for long periods of time to continue essential services.

The economy of Etowah County could possibly take a hit if a major winter storm were to affect the City of Gadsden. All ten of the county's top employers are in the City of Gadsden. Most are within a few miles of each other. Businesses, especially small businesses, will find it difficult to recover following several days or weeks of being closed due to lost utility services.

Glencoe:

The City of Glencoe has a population of 5160 people, living in 2129 households. All 2129 households are susceptible to winter storms. Most vulnerable would be those who depend upon electrical power for heating and medical purposes.

The following key facilities in the City of Glencoe are vulnerable to a major winter storms:

- Glencoe City Hall
- Glencoe Elementary School
- Glencoe Fire Station #1
- Glencoe Fire Station #2
- Glencoe High School
- Glencoe Middle School
- Glencoe Police Department
- Glencoe Public Works Department
- Glencoe Water & Sewer Board

A major winter storm has the possibility of disrupting essential services throughout the City of Glencoe, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Glencoe Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Glencoe Water and Sewer Board. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Hokes Bluff:

The City of Hokes Bluff has a population of 4286 people, living in 1747 households. All 1747 households are susceptible to winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the City of Hokes Bluff are vulnerable to winter storms:

- Hokes Bluff City Hall
- Hokes Bluff Elementary School
- Hokes Bluff Fire Department
- Hokes Bluff High School
- Hokes Bluff Middle School
- Hokes Bluff Police Department
- Hokes Bluff Public Works Department
- Hokes Bluff Water & Sewer Board

A major winter storm has the possibility of disrupting essential services throughout the City of Hokes Bluff, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Hokes Bluff Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Hokes Bluff Water and Sewer Board. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Rainbow City:

The City of Rainbow City has a population of 9602 people, living in 4113 households. It has shown the second largest rate of growth in Etowah County since 2000. All 4113 households are susceptible to winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the City of Rainbow City are vulnerable to winter storms:

- John Jones Elementary School
- Rainbow City Hall
- Rainbow City Fire Station #1
- Rainbow City Fire Station #2
- Rainbow City Police Department
- Rainbow City Streets Department
- Rainbow City Utility Department
- Rainbow Middle School
- Westbrook Christian School

A major winter storm has the possibility of disrupting essential services throughout the City of Rainbow City, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Rainbow City Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Glencoe Utilities Department. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Reece City:

The Town of Reece City has a population of 653 people, living in 258 households. All 258 households are susceptible to winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the Town of Reece City are vulnerable to winter storms:

- Reece City Town Hall

- Reece City Volunteer Fire Department

A major winter storm has the possibility of disrupting essential services throughout the Town of Reece City, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Fire, police, and emergency medical services may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted for citizens.

Ridgeville:

The Town of Ridgeville has a population of 112 people, living in 46 households. All 46 households are susceptible winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the Town of Ridgeville are vulnerable to winter storms:

- Ridgeville Town Hall
- Ridgeville Water Works

A major winter storm has the possibility of disrupting essential services throughout the Town of Ridgeville, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Fire, police, and emergency medical services may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted for citizens.

Sardis City:

The Town of Sardis City has a population of 1704 people, living in 657 households. All 657 households are susceptible to winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the Town of Sardis City are vulnerable to winter storms:

- Sardis High School
- Sardis Middle School

- Sardis City Police Department
- Sardis City Town Hall
- Sardis City Volunteer Fire Department
- Sardis City Water Board

A major winter storm has the possibility of disrupting essential services throughout the Town of Sardis City, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Sardis City Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Sardis City Water and Sewer Board. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Southside:

The City of Southside has a population of 8412 people, living in 3228 households. Southside is the fastest growing city in Etowah County by population. All 3228 households are susceptible to winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the City of Southside are vulnerable to winter storms:

- Southside City Hall
- Southside Elementary School
- Southside Fire Department
- Southside High School
- Southside Police Department
- Southside Street & Sanitation Department
- Southside Water & Sewer Board

A major winter storm has the possibility of disrupting essential services throughout the City of Southside, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Southside Fire and Police may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted to customers of the Southside Water and Sewer Board. Businesses would likely be negatively impacted due to reliance on electrical power. Schools may be out of session for long periods of time.

Walnut Grove:

The Town of Walnut Grove has a population of 698 people, living in 321 households. All 321 households are susceptible to winter storms. Most vulnerable would be those who rely on electrical power for heating and medical purposes.

The following key facilities in the Town of Attalla are vulnerable to winter storms:

- Walnut Grove Town Hall
- Walnut Grove Volunteer Fire Department
- Walnut Grove Water Works
- West End High School

A major winter storm has the possibility of disrupting essential services throughout the Town of Walnut Grove, primarily due to potential power and transportation problems. Essential personnel at key facilities could be delayed or prevented from getting to work due to hazardous road conditions. Fire, police, and emergency medical services may have difficulty accessing those who need help.

Utility services may be disrupted for long periods of time due to the loss of power. This is especially critical for individuals who rely on power for home heating and medical needs, such as oxygen. Water service could be disrupted for citizens. School may be out of session for an extended time.

Household Fires

Nature of the Hazard in Etowah County

Household fires are an unfortunate hazard, which affects life and property. Household fires are usually accidental, and often preventable. National statistics show an upward trend in the number of household fires since 2009. This comes after a significant downward trend from 2006 – 2009. However, residential fire deaths continue to go downward. Injuries remain fairly constant. And residential fire loss numbers have trended sharply downward follow a peak in 2008. Cooking accidents account for the leading cause of household fires. See the figures below for fire statistics (U.S. Fire Administration, 2014).

FIGURE 6.12 FIRE STATISTICS

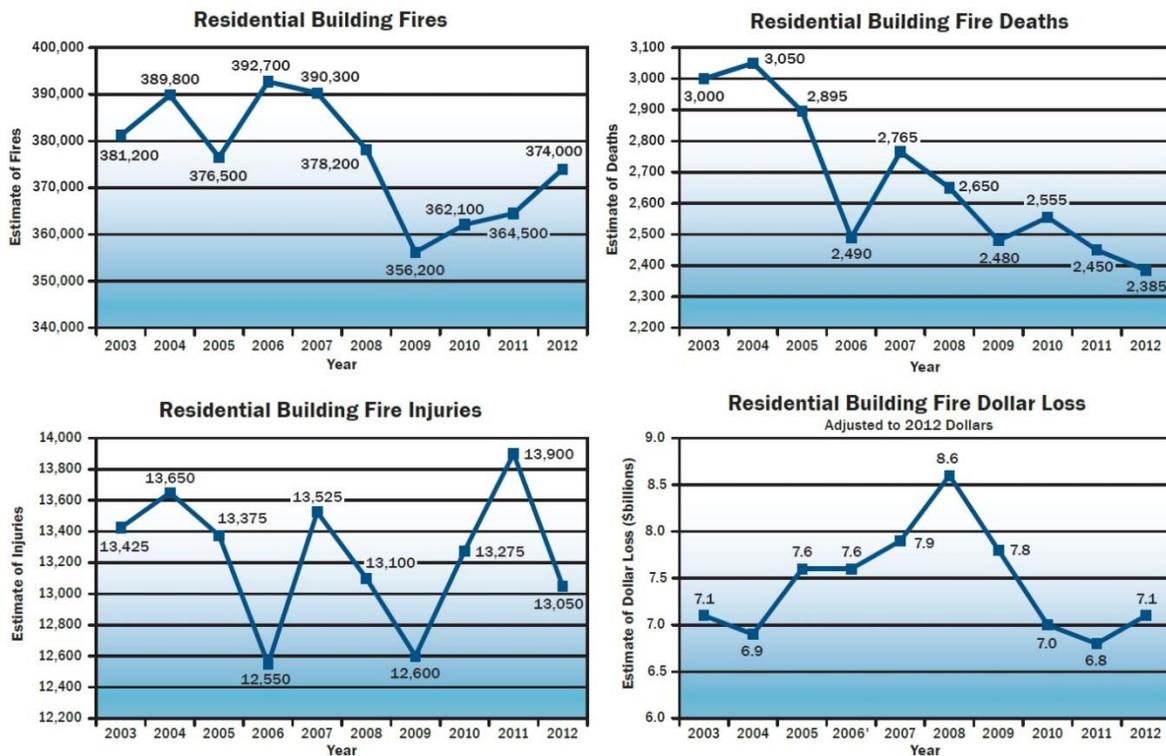
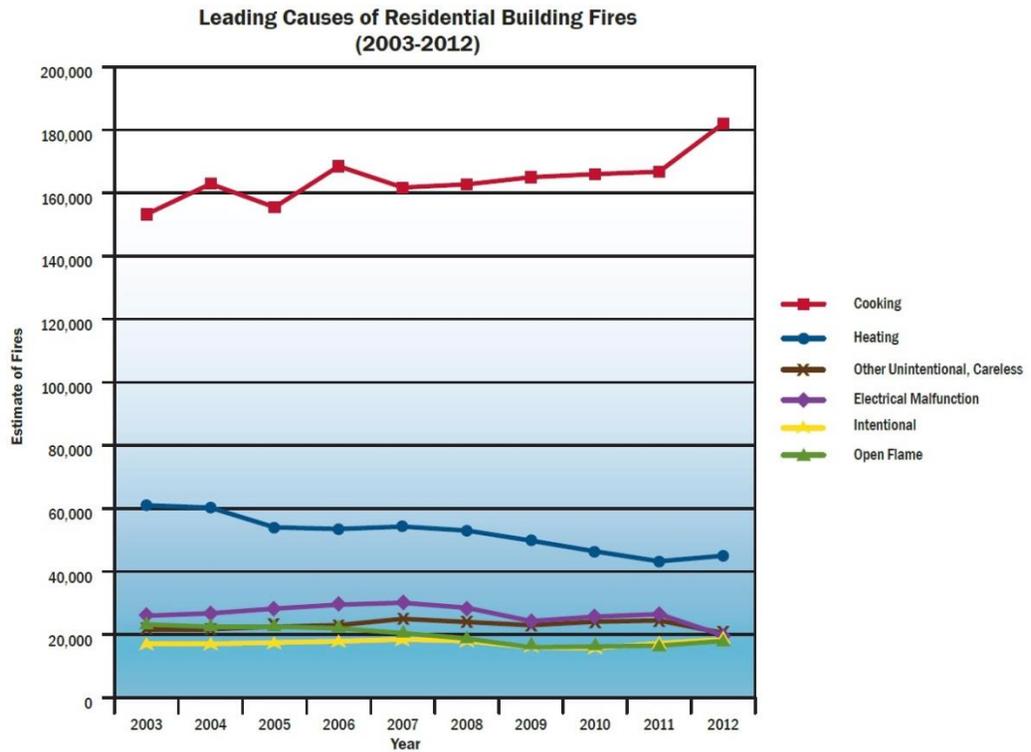
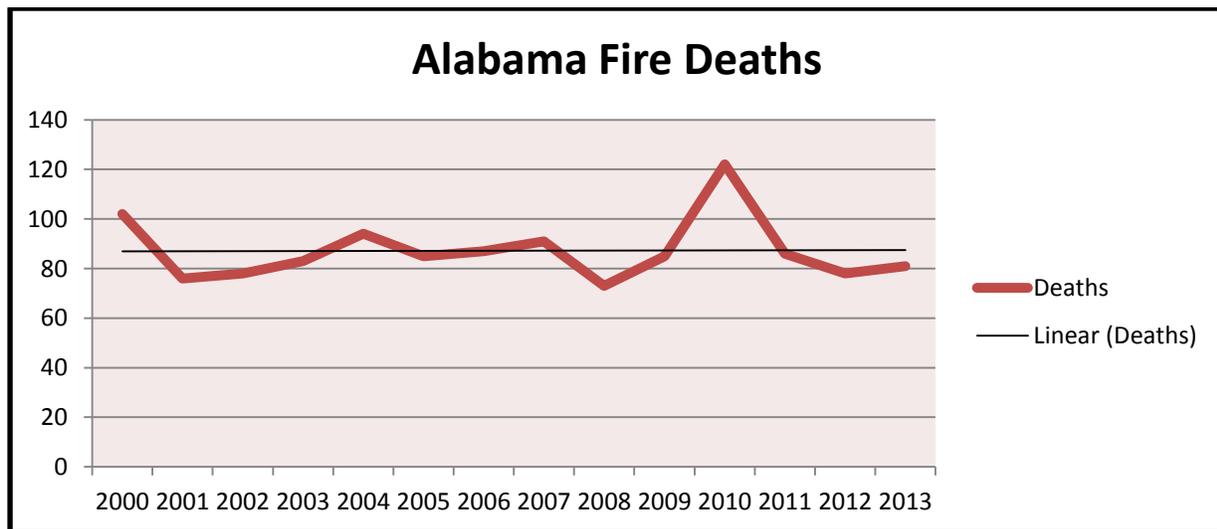


FIGURE 6.13 FIRE CAUSES



Alabama ranks third in the nation in fire death risk. The national fire death relative risk is one. Alabama’s risk, based on 2011 statistics, is 2.2. 3.3% of fire deaths in the United States occurred in Alabama in 2011. Given that 1.5% of the population of the 50 states and the District of Columbia live in Alabama, a disproportionately large number of people in Alabama die in fires compared to the rest of the country. Deaths per year have remained fairly constant (Alabama State Fire Marshall, 2014).

FIGURE 6.14 FIRE DEATHS PER YEAR IN ALABAMA



History of the Hazard in Etowah County

Like the rest of Alabama, fires household fires are a fairly common occurrence in Etowah County. Reliable data from 2005 – 2014 shows a slight upward trend in the number of household fires in jurisdictions with full-time fire departments (Attalla, Gadsden, and Rainbow City). Damage statistics are unavailable. Reliable data on fire deaths are not available before 2009. Fire deaths are trending downward in Etowah County since 2009.

FIGURE 6.15 STRUCTURE FIRES IN ETOWAH COUNTY

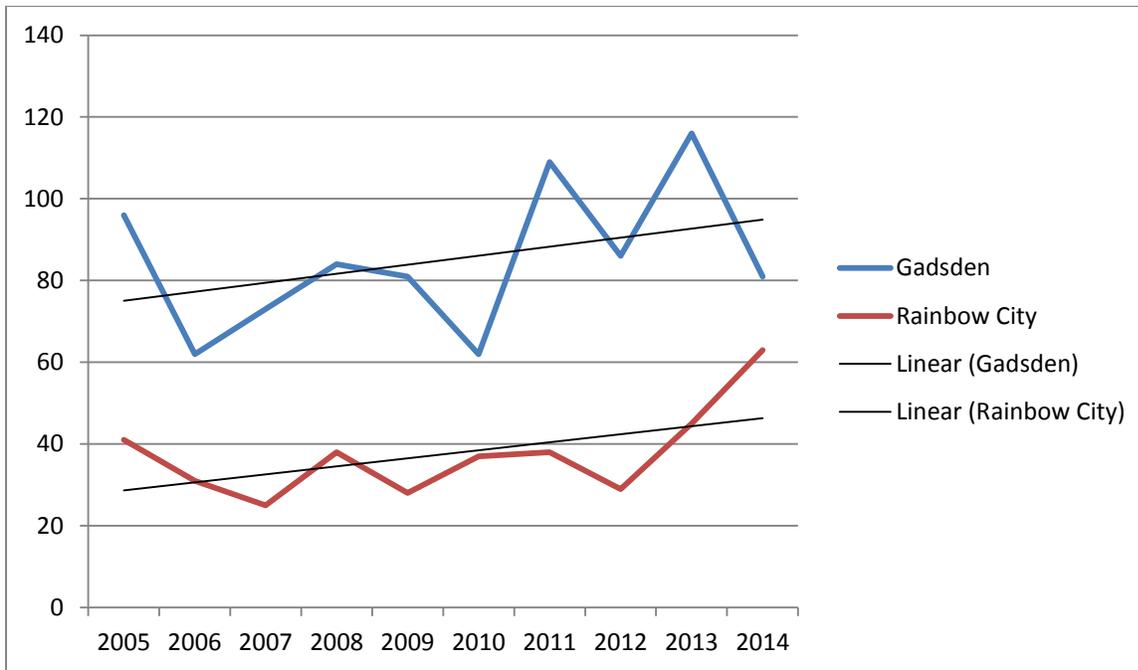
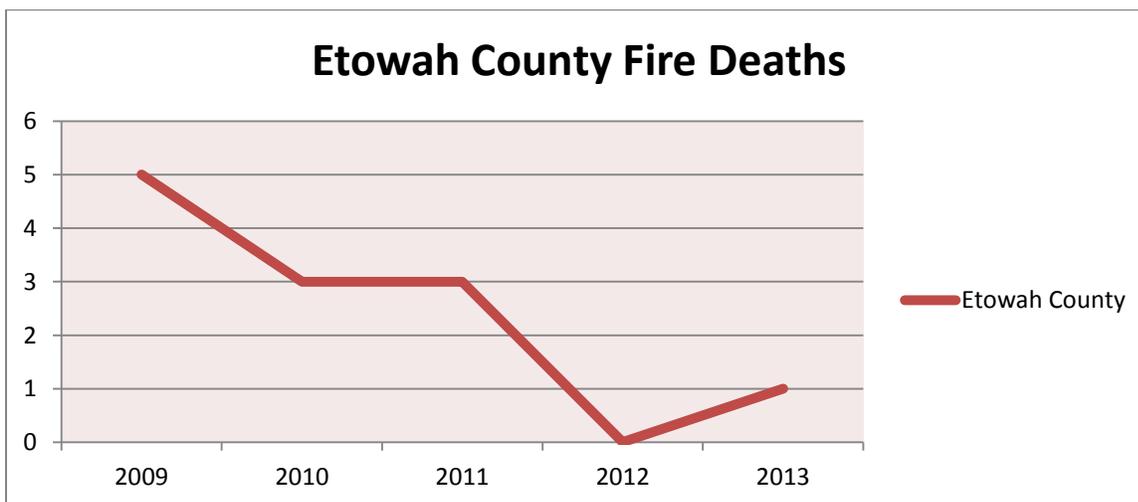


FIGURE 6.16 FIRE DEATHS PER YEAR IN ETOWAH COUNTY



Extent

Extensive data on individual fires would be too expansive for this plan.

Location

Fires can occur anywhere in Etowah County. However, research indicates low-income populations, residents in older homes (prior to 1940), and individuals who do not speak English are more vulnerable to fire injuries (Shai, 2006).

Probability of the Hazard in Etowah County

Etowah County and the municipalities within its borders have a high (100%) probability of occurrence for this type of event.

Household Fire Vulnerability in Etowah County

Household fires may strike any structure in the county. Most are accidental. According to research from the New York State Department of Health, the following groups are at higher risk of death from home fires (New York State Department of Public Health, 2014):

- Persons over the age of 65 are twice as likely to die due to a home fire than the general public;
- Persons age 85 and older are four times more likely to die due to a home fire than the general public;
- Children under the age of five are one and a half times more likely to die due to a home fire than the general public;

The following is a summary of household fire vulnerability for each jurisdiction:

Altoona:

The Town of Altoona has a population of 933 people, living in 317 households. All 317 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the Town of Altoona's population is 39.0 years old. 15.5 % of the population is 65 or older. 4.7% of the population is five years or younger. So 20.2% of the Town of Altoona's population would be most vulnerable to household fires, or about 188 people.

Attalla:

The City of Attalla has a population of 6048 people, living in 2442 households. All 2442 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the City of Attalla's population is 39.7 years old. 17.1 % of the population is 65 or older. 8.0% of the population is five years or younger. So 25.1% of the City of Attalla's population would be most vulnerable to household fires, or about 1518 people.

Etowah County:

Etowah County has a population of 104,430 people, living in 42,063 households. All 42,063 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of Etowah County is 40.3 years old. 15.8% of the population is 65 or older. 5.9% of the population is five years or younger. So 21.7% of Etowah County's population would be most vulnerable to household fires, or about 22,661 people.

Gadsden:

The City of Gadsden has a population of 36,856 people, living in 15,717 households. All 15,717 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the City of

Gadsden's population is 38.4 years old. 16.8 % of the population is 65 or older. 6.4% of the population is five years or younger. So 23.2% of the City of Gadsden's population would be most vulnerable to household fires, or about 8551 people.

Glencoe:

The City of Glencoe has a population of 5160 people, living in 2129 households. All 2129 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the City of Glencoe's population is 45.3 years old. 17.2 % of the population is 65 or older. 5.2% of the population is five years or younger. So 22.4% of the City of Glencoe's population would be most vulnerable to household fires, or about 1156 people.

Hokes Bluff:

The City of Hokes Bluff has a population of 4286 people, living in 1747 households. All 1747 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the City of Hokes Bluff's population is 39.8 years old. 17.4% of the population is 65 or older. 5.3% of the population is five years or younger. So 22.7% of the City of Hokes Bluff's population would be most vulnerable to household fires, or about 973 people.

Rainbow City:

The City of Rainbow City has a population of 9602 people, living in 4113 households. All 4113 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the City of Rainbow City's population is 40.0 years old. 16.8% of the population is 65 or older. 5.6% of the population is five years or younger. So 22.4% of the City of Rainbow City's population would be most vulnerable to household fires, or about 2150 people.

Reece City:

The Town of Reece City has a population of 653 people, living in 258 households. All 258 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the Town of Reece City's population is 42.3 years old. 15.8 % of the population is 65 or older. 3.7% of the population is five years or younger. So 19.5% of the Town of Reece City's population would be most vulnerable to household fires, or about 127 people.

Ridgeville:

The Town of Ridgeville has a population of 112 people, living in 46 households. All 46 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the Town of Ridgeville's population is 48.6 years old. 5.4 % of the population is 65 or older. 4.5% of the population is five years or younger. So 9.9% of the Town of Ridgeville's population would be most vulnerable to household fires, or about 11 people.

Sardis City:

The Town of Sardis City has a population of 1704 people, living in 657 households. All 657 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the Town of Sardis City's population is 43.9 years old. 16.1 % of the population is 65 or older. 5.3% of the population is five years or younger. So 21.4% of the Town of Sardis City's population would be most vulnerable to household fires, or about 365 people.

Southside:

The City of Southside has a population of 8412 people, living in 3228 households. All 3228 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the City of Southside's population is 40.3 years old. 13.4% of the population is 65 or older. 5.7% of the population is five years or younger. So 19.1% of the City of Southside's population would be most vulnerable to household fires, or about 1607 people.

Walnut Grove:

The Town of Walnut Grove has a population of 698 people, living in 321 households. All 321 households are susceptible to household fires. The most vulnerable are adults over the age of 65 and children five years and younger. The median age of the Town of Walnut Grove's population is 33.1 years old. 15.9% of the population is 65 or older. 4.7% of the population is five years or younger. So 20.6% of the Town of Walnut Grove's population would be most vulnerable to household fires, or about 144 people.

Landslides and Sinkholes

Nature of the Hazard in Etowah County

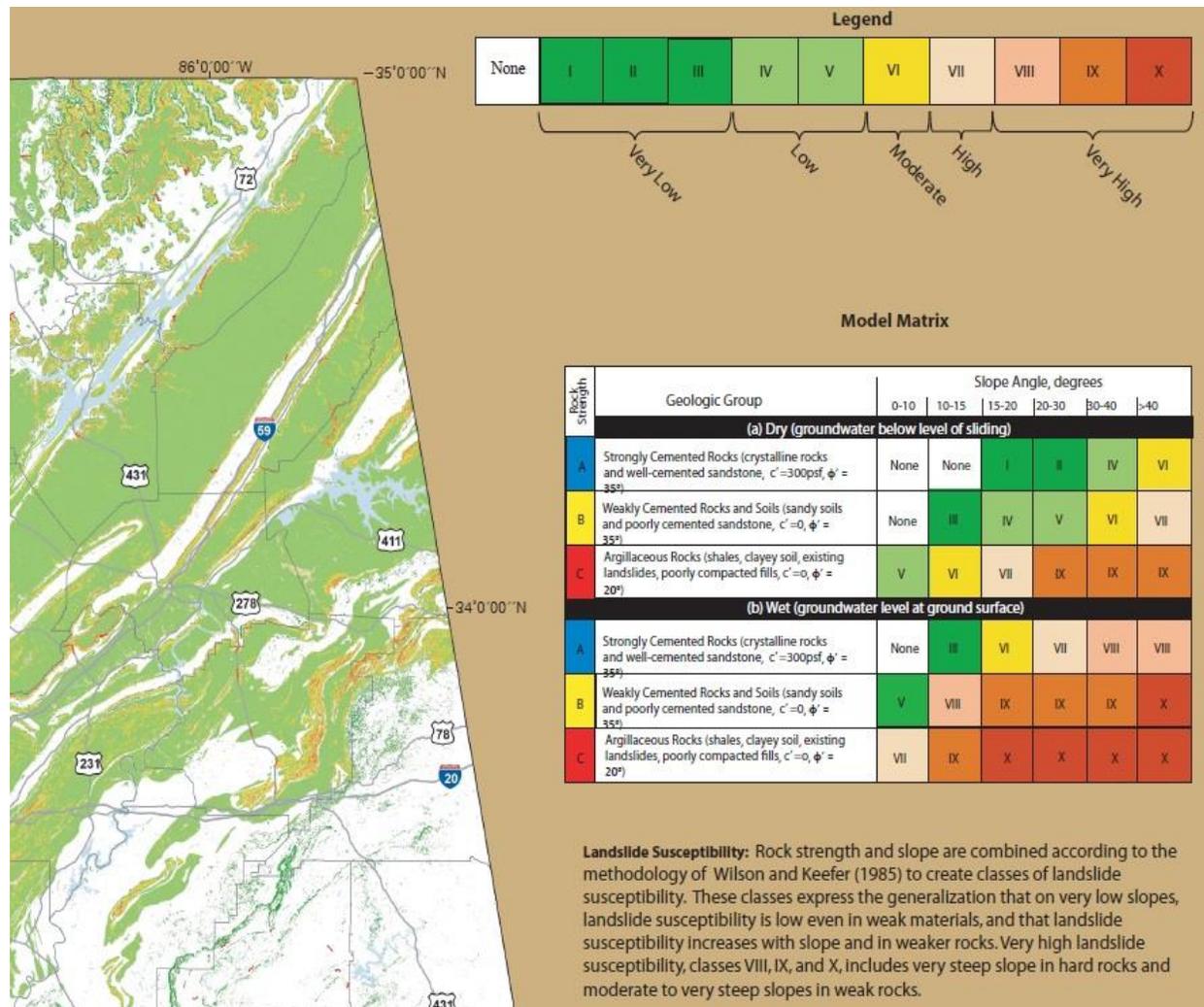
According to the US Geological Survey (USGS), landslides describe, “a wide variety of processes that result in the downward and outward movement of slope-forming materials including rock, soil, artificial fill, or a combination of these (USGS, 2004).” Landslides may occur as falls, topples, slides (rotational or translational), lateral spreads, flows, or complex (combination of the movements).

FIGURE 6.17 TYPES OF LANDSLIDES

| TYPE OF MOVEMENT | | TYPE OF MATERIAL | | |
|------------------|---------------|--|-----------------------------|--------------------|
| | | BEDROCK | ENGINEERING SOILS | |
| | | | Predominantly coarse | Predominantly fine |
| FALLS | | Rock fall | Debris fall | Earth fall |
| TOPPLES | | Rock topple | Debris topple | Earth topple |
| SLIDES | ROTATIONAL | Rock slide | Debris slide | Earth slide |
| | TRANSLATIONAL | | | |
| LATERAL SPREADS | | Rock spread | Debris spread | Earth spread |
| FLOWS | | Rock flow
(deep creep) | Debris flow
(soil creep) | Earth flow |
| COMPLEX | | Combination of two or more principal types of movement | | |

Landslides in Alabama are generally related to geology, natural slopes, and human-influenced topography. Shale, soft clay, and sandy surfaces on moderate to steeply sloped areas are most prone to have landslides (Geologic Survey of Alabama, 2011).

FIGURE 6.18 SUSCEPTIBILITY TO LANDSLIDES IN ETOWAH COUNTY (Ebersole,, Driskell, & Tavis, 2011).



According to the USGS, a sinkhole is defined as, “a depression in the ground that has no natural external surface drainage (Robertson & Orndorff, 2013). Sinkholes are most common in areas where the type of rock below the land surface can naturally be dissolved by groundwater circulating through them.

According to the Geological Survey of Alabama, “the most common causes of land subsidence in Alabama are the development of sinkholes in areas underlain by soluble carbonate rocks or ground collapse above abandoned mines (2011).” Many areas in the northern part of Alabama are susceptible to sinkholes.

History of the Hazard in Etowah County

Landslides are not common in Etowah County. When they occur, they can be anything from a nuisance to a property threatening event. Records indicate the worst landslide in Etowah County’s recorded history happened in 1972. The southbound lane of Interstate 59 slid down a

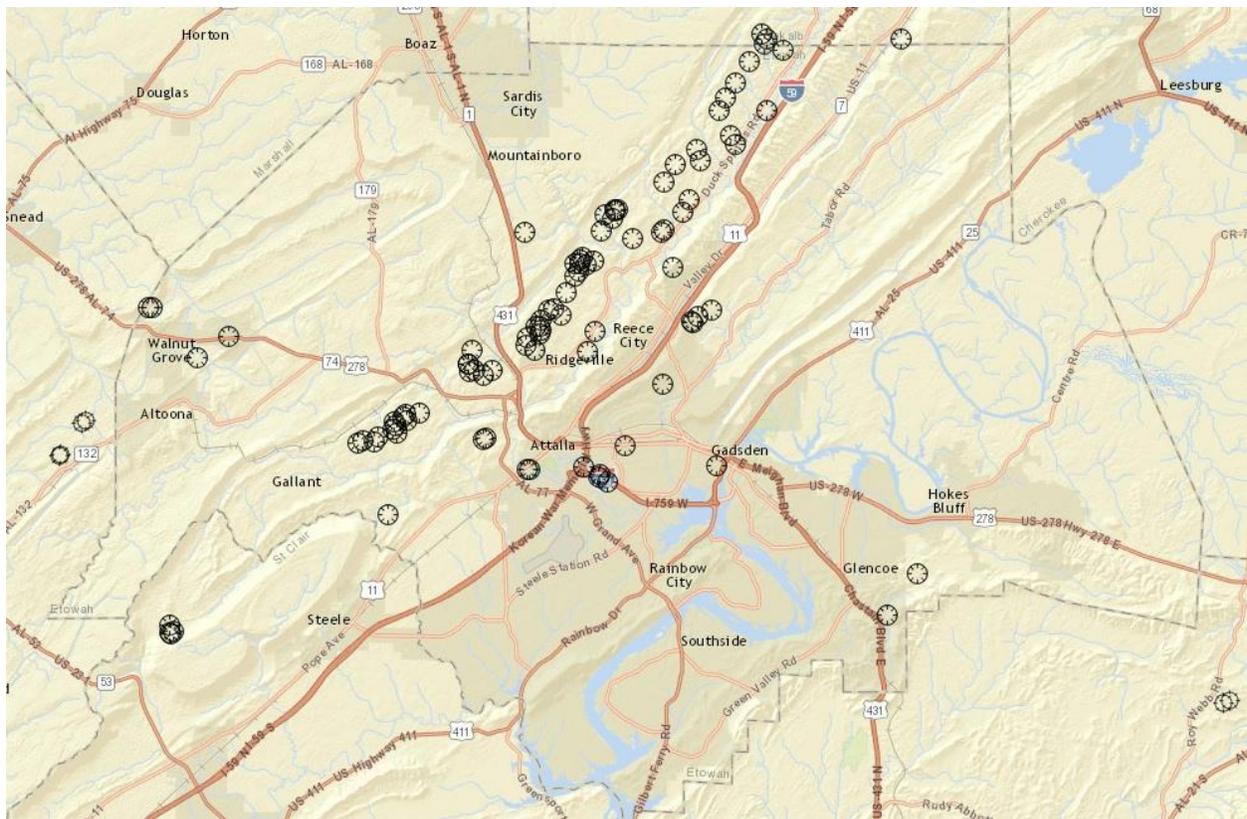
hillside. No injuries were reported. Total damage was \$1.2 million (\$6.2 in 2015 dollars). Extensive repairs caused a major disruption in traffic.

Sinkholes are fairly common in Etowah County. When they occur, they can be anything from a nuisance to a life and property threatening event. Over 100 sinkholes have been reported to the Geological Survey of Alabama since 1950. No reliable data is available on deaths, injuries, or property damage.

Extent

Extensive data on landslides in Etowah County is not available. The following map shows sinkholes in Etowah County which have been reported to the Geological Survey of Alabama since 1950.

FIGURE 6.19 SINKHOLES IN ETOWAH COUNTY



Location

Landslides occur in areas with moderate to steep slopes. The areas which are most likely to have landslides in Etowah County are in the northern half of the county, which is more mountainous. However, slopes exist in every municipality in the county, so they may occur countywide. Sinkholes are most common in a southwest to northeast span from Gallant to Duck Springs. This includes Attalla, Ridgeville, Reece City, and Gadsden. Sinkholes have also been reported in Walnut Grove and Glencoe.

Probability of the Hazard in Etowah County

According to data from the Geological Survey of Alabama (see Figure 6.18), Etowah County has a low to moderate probability of landslides. Given the number of sinkholes reported (see Figure 6.19), Etowah County has a high probability of sinkholes.

Landslide and Sinkhole Vulnerability in Etowah County

Structures and assets along slopes and hillsides are most susceptible to landslides. This is especially true for those located on or near shale, soft clay, and/or sandy surfaces. Structures and assets on areas underlain by soluble carbonate rocks or abandoned mines are most susceptible to sinkholes.

Altoona:

The Town of Altoona is not particularly susceptible to landslides and sinkholes.

Attalla:

The City of Attalla is not particularly susceptible to landslides. Based on history and data from the USGS, areas homes near Alabama Highway 77 and U.S. Highway 11, and Interstate 59 are susceptible to sinkholes. Any home or structure affected by a sinkhole is vulnerable to its effects.

Etowah County:

Areas in the northern portions of the county and in the Whorton Bend area are most susceptible to landslides. The Etowah County Engineering Department has identified these as:

- Whorton Bend Road near US Highway 411
- Wesson Gap Road

Areas running southwest to northeast from the Gallant and Ivalee Communities to Sand Valley Community, to the Keener Community have a history of experiencing sinkholes. Any home or structure affected by a sinkhole is vulnerable to its effects.

Gadsden:

The City of Gadsden is not particularly susceptible to landslides and sinkholes.

Glencoe:

The City of Glencoe is not particularly susceptible to landslides and sinkholes.

Hokes Bluff:

The City of Hokes Bluff is not particularly susceptible to landslides and sinkholes.

Rainbow City:

The City of Rainbow City is not particularly susceptible to landslides and sinkholes.

Reece City:

The Town of Reece City is not particularly susceptible to landslides and sinkholes.

Ridgeville:

The Town of Ridgeville is not particularly susceptible to landslides and sinkholes.

Sardis City:

The Town of Sardis City is not particularly susceptible to landslides and sinkholes.

Southside:

The City of Southside is not particularly susceptible to landslides and sinkholes.

Walnut Grove:

The Town of Walnut Grove is not particularly susceptible to landslides and sinkholes.

SECTION 7: MITIGATION STRATEGY

This section of the plan outlines the strategies for stopping or reducing the effects of the identified hazards. Strategies were developed at the third meeting of the Hazard Mitigation Planning Committee in January, 2015. Some goals, strategies, and projects were carried over from previous plans. Others were discontinued. Appendix D shows an updated status of these projects.

Strategies were based upon recommended mitigation strategies and best practices. Federal requirements state that the mitigation plan must address the following:

- A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
- A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
- An action plan describing how the will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
- For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

The person in the position(s) indicated for each jurisdiction in Section Four will be responsible for administering and implementing the mitigation strategy for his or her jurisdiction. Each representative will be responsible for integrating this mitigation plan into his or her jurisdiction's comprehensive plan. This will be done through comprehensive planning meetings, and through promulgation of new policies, if necessary. The Gadsden/Etowah County Emergency Management Agency will be available for these planning meetings, if needed.

Tornadoes

Goals

The goal of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan as it relates to tornadoes is to reduce the effects of tornadoes. The threat from tornadoes cannot be eliminated, so the emphasis will be on:

1. Protecting life

2. Protecting vital services

3. Protecting property

Mitigation Actions

FIGURE 7.1 TORNADO MITIGATION GOALS AND ACTIONS

| Jurisdiction | Goal | Action(s) | Lead Organization(s) | Funding Source(s) | Timeframe |
|--------------|--------------|--|---|---|-----------|
| Altoona | Protect Life | <ol style="list-style-type: none"> 1. Construct a community safe room which meets FEMA-361 standards for the protection of lives. 2. Purchase and distribute weather radios for early warning of severe weather. 3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives. 4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes. 5. Promote tornado awareness and preparedness to protect lives through a comprehensiv | <ol style="list-style-type: none"> 1. Town of Altoona 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|---------|------------------------|--|---|---|---------|
| | | e public information campaign. | | | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. Town of Altoona
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.
2. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | 1. Town of Altoona
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Attalla | Protect Life | 1. Construct community safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of | 1. City of Attalla
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------------|---|---|---|---------|
| | | <p>lives.</p> <p>2. Purchase and distribute weather radios for early warning of severe weather.</p> <p>3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law</p> | <p>1. City of Attalla
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|---------------|------------------|--|--|---|---------|
| | | enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | | | |
| | Protect Property | <ol style="list-style-type: none"> Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> City of Attalla Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Etowah County | Protect Life | <ol style="list-style-type: none"> Construct community safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of lives. Purchase and distribute weather radios for early warning of severe weather. Acquire funds to assist homeowners with | <ol style="list-style-type: none"> Etowah County Commission Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------------|--|--|---|---------|
| | | <p>purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as County buildings, fire stations, law enforcement hubs, hospitals, emergency operations centers, water plants, and wastewater treatment facilities.</p> | <p>1. Etowah County Commission
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification</p> | <p>1. Etowah County Commission</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|---------|--------------|---|--|---|---------|
| | | <p>standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.</p> <p>2. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign.</p> | 2. Gadsden/ Etowah County EMA | | |
| Gadsden | Protect Life | <p>1. Construct community safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of lives.</p> <p>2. Purchase and distribute weather radios for early warning of severe weather.</p> <p>3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for</p> | <p>1. City of Gadsden</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--|------------------------|---|---|---|---------|
| | | <p>construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, hospitals, emergency operations centers, water plants, and wastewater treatment facilities.</p> | <p>1. City of Gadsden
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.</p> <p>2. Promote</p> | <p>1. City of Gadsden
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|---------|--------------|---|---|---|---------|
| | | tornado awareness and preparedness to protect property through a comprehensive public information campaign. | | | |
| Glencoe | Protect Life | <ol style="list-style-type: none"> 1. Construct community safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of lives. 2. Purchase and distribute weather radios for early warning of severe weather. 3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives. 4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes. 5. Promote tornado | <ol style="list-style-type: none"> 1. City of Glencoe 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|-------------|------------------------|--|---|---|---------|
| | | awareness and preparedness to protect lives through a comprehensive public information campaign. | | | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. City of Glencoe
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.
2. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | 1. City of Glencoe
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |
| Hokes Bluff | Protect Life | 1. Construct community | 1. City of Hokes Bluff | <ul style="list-style-type: none"> • Local budgets • Community | 5 years |

| | | | | | |
|--|------------------------|--|--|--|---------|
| | | <p>safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of lives.</p> <p>2. Purchase and distribute weather radios for early warning of severe weather.</p> <p>3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | 2. Gadsden/ Etowah County EMA | <p>Development Funds</p> <ul style="list-style-type: none"> • HMGP • PDM | |
| | Protect Vital Services | 1. Purchase generators for backup power | 1. City of Hokes Bluff
2. Gadsden/ Etowah | <ul style="list-style-type: none"> • Local budgets • Community Development | 5 years |

| | | | | | |
|--------------|------------------|--|--|---|---------|
| | | at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | County EMA | <ul style="list-style-type: none"> Funds • HMGP • PDM | |
| | Protect Property | <ol style="list-style-type: none"> Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> City of Hokes Bluff Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |
| Rainbow City | Protect Life | <ol style="list-style-type: none"> Construct community safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of lives. Purchase and distribute weather radios for | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--|------------------------|---|---|---|---------|
| | | <p>early warning of severe weather.</p> <p>3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water</p> | <p>1. City of Rainbow City</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|------------|------------------|--|--|---|---------|
| | | plants, and wastewater treatment facilities. | | | |
| | Protect Property | <ol style="list-style-type: none"> Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Reece City | Protect Life | <ol style="list-style-type: none"> Construct a community safe room which meets FEMA-361 standards in vulnerable areas for the protection of lives. Purchase and distribute weather radios for early warning of severe weather. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 | <ol style="list-style-type: none"> Town of Reece City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------------|---|--|---|---------|
| | | <p>standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, and emergency operations centers.</p> | <p>1. Town of Reece City
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.</p> <p>2. Promote tornado awareness</p> | <p>1. Town of Reece City
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|------------|--------------|---|--|---|---------|
| | | and preparedness to protect property through a comprehensive public information campaign. | | | |
| Ridgeville | Protect Life | <ol style="list-style-type: none"> 1. Construct community a safe room which meets FEMA-361 standards in vulnerable areas for the protection of lives. 2. Purchase and distribute weather radios for early warning of severe weather. 3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives. 4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes. 5. Promote tornado awareness and | <ol style="list-style-type: none"> 1. Town of Ridgeville 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|-------------|------------------------|--|---|---|---------|
| | | preparedness to protect lives through a comprehensive public information campaign. | | | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. Town of Ridgeville
2. Gadsden/Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.
2. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | 1. Town of Ridgeville
2. Gadsden/Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Sardis City | Protect Life | 1. Construct a community safe room which meets | 1. Town of Sardis City
2. Gadsden/ | <ul style="list-style-type: none"> Local budgets Community Development | 5 years |

| | | | | | |
|--|------------------------|--|--|--|---------|
| | | <p>FEMA-361 standards for the protection of lives.</p> <p>2. Purchase and distribute weather radios for early warning of severe weather.</p> <p>3. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | Etowah County EMA | <p>Funds</p> <ul style="list-style-type: none"> • HMGP • PDM | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as</p> | <p>1. Town of Sardis City</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP | 5 years |

| | | | | | |
|-----------|------------------|--|---|---|---------|
| | | municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | | <ul style="list-style-type: none"> • PDM | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes. 2. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Town of Sardis City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |
| Southside | Protect Life | <ol style="list-style-type: none"> 1. Construct community safe rooms which meet FEMA-361 standards in vulnerable areas for the protection of lives. 2. Purchase and distribute weather radios for early warning of severe weather. 3. Acquire funds to assist | <ol style="list-style-type: none"> 1. City of Southside 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--|------------------------|--|--|---|---------|
| | | <p>homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives.</p> <p>4. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> | <p>1. City of Southside</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--------------|------------------|--|--|---|---------|
| | Protect Property | <ol style="list-style-type: none"> Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> City of Southside Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Walnut Grove | Protect Life | <ol style="list-style-type: none"> Construct a community safe room which meets FEMA-361 standards in vulnerable areas for the protection of lives. Purchase and distribute weather radios for early warning of severe weather. Acquire funds to assist homeowners with purchasing and installing residential safe rooms which meet FEMA-320 standards for the protection of lives. Promote | <ol style="list-style-type: none"> Town of Walnut Grove Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------------|--|--|---|---------|
| | | <p>fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from tornadoes.</p> <p>5. Promote tornado awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> | <p>1. Town of Walnut Grove
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from tornadoes.</p> | <p>1. Town of Walnut Grove
2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|--|--|--|--|--|--|
| | | 2. Promote tornado awareness and preparedness to protect property through a comprehensive public information campaign. | | | |
|--|--|--|--|--|--|

Action Plan

The priorities of goals for mitigation projects for tornadoes are: 1) life protection, 2) vital services protection, 3) property protection. Each jurisdiction’s actions for the goals are listed in order of prioritization in Figure 7.1. Each jurisdiction will administer its own mitigation projects. When mitigation grants become available to jurisdictions within Etowah County, the Hazard Mitigation Planning Committee will prioritize projects as a group. The final prioritization rankings will be done by committee vote. A special emphasis will be placed on projects which will garner the most benefit for cost, and which will benefit vulnerable populations.

Each jurisdiction will work on its individual projects throughout the life of this plan (five years). The cost will vary according to the scope of the work. Funds will be sought from local, state, and national sources. Locally, funds will be sought from local government budgets, local grants, businesses, and non-governmental organizations. Funds will be sought at the state level from state grants and budgets. Funds will be sought nationally from Federal grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Community Development Block Grants, among others).

A review of each project will take place at the yearly mitigation plan review meeting. The review will focus on the accomplishing of goals related to tornadoes. Changes in goals and actions may take place following these meetings.

Severe Thunderstorms

Goals

The goal of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan as it relates to severe thunderstorms is to reduce the effects of severe thunderstorms. The threat from severe thunderstorms cannot be eliminated, so the emphasis will be on:

1. Protecting life

2. Protecting vital services

3. Protecting property

Mitigation Actions

FIGURE 7.2 SEVERE THUNDERSTORMS MITIGATION GOALS AND ACTIONS

| Jurisdiction | Goal | Action(s) | Lead Organization(s) | Funding Source(s) | Timeframe |
|--------------|------------------------|--|---|---|-----------|
| Altoona | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute weather radios for early warning of severe weather. 2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds. 3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Town of Altoona 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | <ol style="list-style-type: none"> 1. Town of Altoona 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote fortification standards for construction of new, rebuilt, or | <ol style="list-style-type: none"> 1. Town of Altoona 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|---------|------------------------|---|---|---|---------|
| | | <p>extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign.</p> | | | |
| Attalla | Protect Life | <p>1. Purchase and distribute weather radios for early warning of severe weather.</p> <p>2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds.</p> <p>3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | <p>1. City of Attalla
2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement</p> | <p>1. City of Attalla
2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|---------------|------------------|--|---|---|---------|
| | | <p>hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <p>2. Retrofit Attalla Fire Station #1 roof to protect facility against severe thunderstorms.</p> | | | |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign.</p> <p>3. Retrofit Attalla Recreation Center roof to protect facility against severe thunderstorms.</p> <p>4. Retrofit roof at 4th Street school.</p> | <p>1. City of Attalla</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |
| Etowah County | Protect Life | <p>1. Purchase and distribute weather radios for early warning of severe weather.</p> <p>2. Promote fortification standards for construction of new, rebuilt, or extensively</p> | <p>1. Etowah County Commission</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |

| | | | | | |
|--|------------------------|--|---|---|---------|
| | | <p>remodeled homes which will help protect lives from severe thunderstorm winds.</p> <p>3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as County buildings, fire stations, law enforcement hubs, hospitals, emergency operations centers, water plants, and wastewater treatment facilities.</p> <p>2. Remove trees and brush from right of way to mitigate wind storms.</p> | <p>1. Etowah County Commission</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm awareness and preparedness to</p> | <p>1. Etowah County Commission</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | protect property through a comprehensive public information campaign. | | | |
|---------|------------------------|--|---|---|---------|
| Gadsden | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute weather radios for early warning of severe weather. 2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds. 3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Gadsden 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. 2. Conduct a street tree assessment project to address debris and trees from | <ol style="list-style-type: none"> 1. City of Gadsden 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|---------|------------------|---|---|---|---------|
| | | severe thunderstorms. | | | |
| | Protect Property | <ol style="list-style-type: none"> Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign. Remove dangerous trees from right-of-ways. | <ol style="list-style-type: none"> City of Gadsden Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Glencoe | Protect Life | <ol style="list-style-type: none"> Purchase and distribute weather radios for early warning of severe weather. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information | <ol style="list-style-type: none"> City of Glencoe Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |

| | | | | | |
|-------------|------------------------|--|---|---|---------|
| | | campaign. | | | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. City of Glencoe
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.
2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign. | 1. City of Glencoe
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |
| Hokes Bluff | Protect Life | 1. Purchase and distribute weather radios for early warning of severe weather.
2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect | 1. City of Hokes Bluff
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |

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|--|------------------------|--|--|---|---------|
| | | <p>lives from severe thunderstorm winds.</p> <p>3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <p>2. Retrofit Hokes Bluff City Hall roof to protect facility against severe thunderstorms.</p> | <p>1. City of Hokes Bluff</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive</p> | <p>1. City of Hokes Bluff</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | public information campaign. | | | |
|--------------|------------------------|--|--|---|---------|
| Rainbow City | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute weather radios for early warning of severe weather. 2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds. 3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Rainbow City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. 2. Retrofit Rainbow City Community Center/Library roof to protect facility against severe thunderstorms. | <ol style="list-style-type: none"> 1. City of Rainbow City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect | 1. Promote | 1. City of Rainbow | • Local budgets | 5 years |

| | | | | | |
|------------|------------------------|---|---|---|---------|
| | Property | <p>fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign.</p> | <p>City</p> <p>2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • EMPG | |
| Reece City | Protect Life | <p>1. Purchase and distribute weather radios for early warning of severe weather.</p> <p>2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds.</p> <p>3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | <p>1. Town of Reece City</p> <p>2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as</p> | <p>1. Town of Reece City</p> <p>2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP | 5 years |

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| | | municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | | <ul style="list-style-type: none"> • PDM | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds. 2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Town of Reece City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |
| Ridgeville | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute weather radios for early warning of severe weather. 2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds. 3. Promote severe thunderstorm awareness and preparedness to | <ol style="list-style-type: none"> 1. Town of Ridgeville 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |

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|-------------|------------------------|--|--|---|---------|
| | | protect lives through a comprehensive public information campaign. | | | |
| | Protect Vital Services | <ol style="list-style-type: none"> 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. 2. Retrofit Ridgeville Town Hall roof to protect facility against severe thunderstorms. | <ol style="list-style-type: none"> 1. Town of Ridgeville 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds. 2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Town of Ridgeville 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |
| Sardis City | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute weather radios for early | <ol style="list-style-type: none"> 1. Town of Sardis City 2. Gadsden/ Etowah County | <ul style="list-style-type: none"> • Local budgets • Community Development Funds | 5 years |

| | | | | | |
|--|------------------------|---|--|---|---------|
| | | <p>warning of severe weather.</p> <p>2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds.</p> <p>3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | EMA | <ul style="list-style-type: none"> • HMGP • PDM • EMPG | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | <p>1. Town of Sardis City</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm</p> | <p>1. Town of Sardis City</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|-----------|------------------------|--|---|---|---------|
| | | awareness and preparedness to protect property through a comprehensive public information campaign. | | | |
| Southside | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute weather radios for early warning of severe weather. 2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds. 3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Southside 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | <ol style="list-style-type: none"> 1. City of Southside 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote fortification standards for | <ol style="list-style-type: none"> 1. City of Southside 2. Gadsden/ | <ul style="list-style-type: none"> • Local budgets • EMPG | 5 years |

| | | | | | |
|--------------|------------------------|---|---|---|---------|
| | | <p>construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds.</p> <p>2. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign.</p> | Etowah County EMA | | |
| Walnut Grove | Protect Life | <p>1. Purchase and distribute weather radios for early warning of severe weather.</p> <p>2. Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect lives from severe thunderstorm winds.</p> <p>3. Promote severe thunderstorm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | <p>1. Town of Walnut Grove</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire</p> | <p>1. Town of Walnut Grove</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--|------------------|--|--|---|---------|
| | | stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | | | |
| | Protect Property | <ol style="list-style-type: none"> Promote fortification standards for construction of new, rebuilt, or extensively remodeled homes which will help protect property from severe thunderstorm winds. Promote severe thunderstorm awareness and preparedness to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> Town of Walnut Grove Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG | 5 years |

Action Plan

The priorities of goals for mitigation projects for severe thunderstorms are: 1) life protection, 2) vital services protection, 3) property protection. Each jurisdiction’s actions for the goals are listed in order of prioritization in Figure 7.1. Each jurisdiction will administer its own mitigation projects. When mitigation grants become available to jurisdictions within Etowah County, the Hazard Mitigation Planning Committee will prioritize projects as a group. The final prioritization rankings will be done by committee vote. A special emphasis will be placed on projects which will garner the most benefit for cost, and which will benefit vulnerable populations.

Each jurisdiction will work on its individual projects throughout the life of this plan (five years). The cost will vary according to the scope of the work. Funds will be sought from local, state, and national sources. Locally, funds will be sought from local government budgets, local grants, businesses, and non-governmental organizations. Funds will be sought at the state level from state grants and budgets. Funds will be sought nationally from Federal grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Community Development Block Grants, among others).

A review of each project will take place at the yearly mitigation plan review meeting. The review will focus on the accomplishing of goals related to severe thunderstorms. Changes in goals and actions may take place following these meetings.

Floods

Goals

The goal of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan as it relates to floods is to reduce the effects of flooding. The threat from floods cannot be eliminated, so the emphasis will be on:

- 1. Protecting life*
- 2. Protecting vital services*
- 3. Protecting property*

Mitigation Actions

FIGURE 7.3 FLOOD MITIGATION GOALS AND ACTIONS

| Jurisdiction | Goal | Action(s) | Lead Organization(s) | Funding Source(s) | Timeframe |
|--------------|------------------------|---|---|---|-----------|
| Altoona | Protect Life | <ol style="list-style-type: none"> Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. Purchase and distribute weather radios for early warning of floods. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> Town of Altoona Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. Improve drainage at the intersection of 2nd Street & College Street. Improve drainage on 6th Avenue. | <ol style="list-style-type: none"> Town of Altoona Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect | 1. Promote | 1. Town of Altoona | <ul style="list-style-type: none"> Local budgets | 5 years |

| | | | | | |
|---------|---------------|---|---|---|---------|
| | Property | <p>development away from floodprone areas.</p> <ol style="list-style-type: none"> Promote flood insurance for homeowners and renters, especially in floodprone areas. Educate property owners of flood plain management ordinance permitting requirements. Create a plan for participation in the Community Rating System. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas. | 2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> EMPG Community Development Funds HMGF PDM | |
| Attalla | Protect Life | <ol style="list-style-type: none"> Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. Purchase and distribute weather radios for early warning of floods. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> City of Attalla Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGF PDM | 5 years |
| | Protect Vital | 1. Purchase generators for | <ol style="list-style-type: none"> City of Attalla Gadsden/ | <ul style="list-style-type: none"> Local budgets Community | 5 years |

| | | | | | |
|--|------------------|--|---|---|---------|
| | Services | <p>backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <ol style="list-style-type: none"> 2. Improve drainage from Hannah Avenue to Brown Avenue 3. Improve drainage on Burke Avenue. 4. Improve drainage from 1st Street to 5th Avenue. 5. Improve drainage at the underpass at 5th Avenue. 6. Improve drainage from the 800 – 1000 blocks on West 5th Avenue 7. Improve drainage between 3rd Street and 7th Avenue. | Etowah County
EMA | <p>Development Funds</p> <ul style="list-style-type: none"> • HMGP • PDM | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote development away from floodprone areas. 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for | <ol style="list-style-type: none"> 1. City of Attalla 2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|---------------|------------------------|---|---|---|---------|
| | | <p>participation in the Community Rating System.</p> <p>5. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.</p> <p>6. Improve drainage at Attalla County Club golf course.</p> <p>7. Improve drainage at the Attalla City Park on Alabama Highway 77.</p> <p>8. Improve drainage at the American Legion Fair Grounds on Cleveland Avenue.</p> | | | |
| Etowah County | Protect Life | <p>1. Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign.</p> <p>2. Purchase and distribute weather radios for early warning of floods.</p> <p>3. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas.</p> <p>4. Support legislation for a State dam safety program.</p> | <p>1. Etowah County Commission</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such</p> | <p>1. Etowah County Commission</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP | 5 years |

| | | | | | |
|--|------------------|---|--|---|---------|
| | | <p>as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <ol style="list-style-type: none"> 2. Improve drainage on Coosa Drive. 3. Improve drainage on Adams Road. 4. Improve drainage on Cox Gap Road. 5. Improve drainage on Owls Hollow Road. 6. Improve drainage on Murphree Valley Road. | | <ul style="list-style-type: none"> • PDM | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote development away from floodprone areas. 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for participation in the Community Rating System. 5. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas. 6. Address flooding of Bristow Cove | <ol style="list-style-type: none"> 1. Etowah County Commission 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |

| | | Road at Barstow Creek.
7. Address flooding at Jackson Trail. | | | |
|---------|------------------------|--|---|---|---------|
| Gadsden | Protect Life | <ol style="list-style-type: none"> Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. Purchase and distribute weather radios for early warning of floods. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> City of Gadsden Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. Improve draining on 6th Street. Improve drainage at Oak Park. Improve drainage on South 4th Street. Improve drainage on Herzberg Circle and | <ol style="list-style-type: none"> City of Gadsden Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------|---|---|---|---------|
| | | <p>Herzberg Avenue.</p> <ol style="list-style-type: none"> 6. Improve drainage on Forrest Avenue. 7. Improve drainage on Goldenrod Avenue. 8. Improve drainage in South Gadsden. 9. Improve drainage on Arrowhead Drive. 10. Improve drainage on East Broad Street. 11. Improve drainage on Stonewall Avenue. 12. Improve drainage in the Mill Village. 13. Improve drainage on Belleview Drive and Monte Vista Drive | | | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote development away from floodprone areas. 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for participation in the Community Rating System. 5. Acquire and demolish flood prone structures and replace with | <ol style="list-style-type: none"> 1. City of Gadsden 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMGP • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|---------|------------------------|---|--|---|---------|
| | | <p>permanent open space or recreation areas.</p> <p>6. Improve drainage at Agricola Shopping Center.</p> <p>7. Improve drainage at Etowah Park.</p> | | | |
| Glencoe | Protect Life | <p>1. Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign.</p> <p>2. Purchase and distribute weather radios for early warning of floods.</p> <p>3. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas.</p> <p>4. Support legislation for a State dam safety program.</p> | <p>1. City of Glencoe</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <p>2. Improve drainage on Larry Street.</p> <p>3. Improve drainage on Larrydale Drive.</p> | <p>1. City of Glencoe</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|-------------|------------------|--|---|---|---------|
| | | <ol style="list-style-type: none"> 4. Improve drainage on Macon Drive. 5. Improve drainage on Glenport Avenue. 6. Improve drainage along Taylor Road. | | | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote development away from floodprone areas. 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for participation in the Community Rating System. 5. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas. | <ol style="list-style-type: none"> 1. City of Glencoe 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |
| Hokes Bluff | Protect Life | <ol style="list-style-type: none"> 1. Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. 2. Purchase and distribute weather radios for early warning of floods. 3. Purchase and install “Turn Around, Don’t | <ol style="list-style-type: none"> 1. City of Hokes Bluff 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--|------------------------|---|--|---|---------|
| | | <p>Drown” signs for known flash flood areas.</p> <p>4. Support legislation for a State dam safety program.</p> | | | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <p>2. Improve drainage on Eastview Avenue.</p> | <p>1. City of Hokes Bluff</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <p>1. Promote development away from floodprone areas.</p> <p>2. Promote flood insurance for homeowners and renters, especially in floodprone areas.</p> <p>3. Educate property owners of flood plain management ordinance permitting requirements.</p> <p>4. Create a plan for participation in the Community Rating System.</p> <p>5. Acquire and demolish flood prone structures and replace with permanent open space or</p> | <p>1. City of Hokes Bluff</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |

| | | recreation areas. | | | |
|--------------|------------------------|--|--|---|---------|
| Rainbow City | Protect Life | <ol style="list-style-type: none"> Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. Purchase and distribute weather radios for early warning of floods. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. Improve drainage on Gilmer Lane. Improve drainage on Brown Avenue. Improve drainage on Westminister Drive. | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | <ol style="list-style-type: none"> Promote development away from floodprone areas. | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Community Development | 5 years |

| | | | | | |
|------------|--------------|--|--|---|---------|
| | | <ol style="list-style-type: none"> 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for participation in the Community Rating System. 5. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas. 6. Improve drainage at Whorton Creek. 7. Improve drainage at Dry Creek. | | <p>Funds</p> <ul style="list-style-type: none"> • HMGP • PDM | |
| Reece City | Protect Life | <ol style="list-style-type: none"> 1. Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. 2. Purchase and distribute weather radios for early warning of floods. 3. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. 4. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> 1. Town of Reece City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect | 1. Purchase | 1. Town of Reece | <ul style="list-style-type: none"> • Local budgets | 5 years |

| | | | | | |
|--|------------------|--|--|---|---------|
| | Vital Services | <p>generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <ol style="list-style-type: none"> 2. Improve drainage on Nichols Road. 3. Improve drainage on Donald Road. 4. Improve drainage on Higdon Road. 5. Improve drainage on Crudup Road. 6. Improve drainage at the 500 block of US Highway 11. | <p>City
2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Community Development Funds • HMGP • PDM | |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote development away from floodprone areas. 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for participation in the Community Rating System. 5. Acquire and demolish flood | <ol style="list-style-type: none"> 1. Town of Reece City 2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|-------------|------------------------|--|---|---|---------|
| | | prone structures and replace with permanent open space or recreation areas. | | | |
| Ridgeville | Protect Life | 1. Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. | 1. Town of Ridgeville
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.
2. Improve drainage on Main Street. | 1. Town of Ridgeville
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | 1. Promote flood insurance for homeowners and renters, especially in floodprone areas. | 1. Town of Ridgeville
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Community Development Funds HMGP PDM | 5 years |
| Sardis City | Protect Life | 1. Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign.
2. Purchase and distribute weather radios for early warning of floods. | 1. Town of Sardis City
2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------------|--|---|---|---------|
| | | <ol style="list-style-type: none"> 3. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. 4. Support legislation for a State dam safety program. | | | |
| | Protect Vital Services | <ol style="list-style-type: none"> 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. 3. Bridge reinforcement. | <ol style="list-style-type: none"> 1. Town of Sardis City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote development away from floodprone areas. 2. Promote flood insurance for homeowners and renters, especially in floodprone areas. 3. Educate property owners of flood plain management ordinance permitting requirements. 4. Create a plan for participation in the Community Rating System. 5. Acquire and demolish flood prone structures and replace with | <ol style="list-style-type: none"> 1. Town of Sardis City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |

| | | permanent open space or recreation areas. | | | |
|-----------|------------------------|---|---|---|---------|
| Southside | Protect Life | <ol style="list-style-type: none"> Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. Purchase and distribute weather radios for early warning of floods. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> City of Southside Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. Improve drainage on Hall Drive. Improve drainage on Robertson Street West. Improve drainage on Cedar Bend Road at Miller Creek. Improve drainage on Cedar Bend | <ol style="list-style-type: none"> City of Southside Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--|------------------|--|--|---|---------|
| | | <p>Road at Richland Way.</p> <p>6. Improve drainage on Abernathy Circle.</p> <p>7. Improve drainage on Island Way.</p> <p>8. Improve drainage at Vista Trail and Lakemont Drive.</p> <p>9. Improve drainage on Valley Lake Drive</p> <p>10. Improve drainage on South Valley Road in the Berkley Hills Area.</p> <p>11. Improve drainage on Rosewood Lane</p> <p>12. Improve drainage on Mountainview Drive.</p> <p>13. Improve drainage on Robertson Street East.</p> <p>14. Improve drainage on Watson Street.</p> | | | |
| | Protect Property | <p>1. Promote development away from floodprone areas.</p> <p>2. Promote flood insurance for homeowners and renters, especially in floodprone areas.</p> <p>3. Educate property owners of flood plain management ordinance permitting requirements.</p> <p>4. Create a plan for participation in</p> | <p>1. City of Southside</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--------------|------------------------|--|--|---|---------|
| | | the Community Rating System.
5. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas. | | | |
| Walnut Grove | Protect Life | <ol style="list-style-type: none"> Promote flood awareness and preparedness to protect lives through a comprehensive public information campaign. Purchase and distribute weather radios for early warning of floods. Purchase and install “Turn Around, Don’t Drown” signs for known flash flood areas. Support legislation for a State dam safety program. | <ol style="list-style-type: none"> Town of Walnut Grove Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | <ol style="list-style-type: none"> Town of Walnut Grove Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | 1. Promote development away from floodprone areas. | <ol style="list-style-type: none"> Town of Walnut Grove Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Community Development | 5 years |

| | | | | | |
|--|--|---|--|--|--|
| | | <p>2. Promote flood insurance for homeowners and renters, especially in floodprone areas.</p> <p>3. Educate property owners of flood plain management ordinance permitting requirements.</p> <p>4. Create a plan for participation in the Community Rating System.</p> <p>5. Acquire and demolish flood prone structures and replace with permanent open space or recreation areas.</p> | | <p>Funds</p> <ul style="list-style-type: none"> • HMGP • PDM | |
|--|--|---|--|--|--|

FIGURE 7.3.1 ETOWAH COUNTY NATIONAL FLOOD INSURANCE PROGRAM COMMUNITIES

| CID | COMMUNITY | INITIAL FHBM IDENTIFIED | INITIAL FIRM IDENTIFIED | CURRENT MAP DATE |
|--------|----------------------|--|-------------------------|------------------|
| 010078 | Town of Altoona | 5/17/74 | 3/14/80 | 8/3/09 |
| 010079 | City of Attalla | 12/28/73 | 12/01/81 | 9/26/08 |
| 010077 | Etowah County | 02/17/78 | 04/15/82 | 09/26/08 |
| 010080 | City of Gadsden | 03/08/74 | 04/04/83 | 09/26/08 |
| 010081 | City of Glencoe | 05/17/74 | 12/01/81 | 09/26/08 |
| 010254 | Town of Hokes Bluff | 12/10/76 | 03/28/80 | 09/26/08 |
| 010351 | City of Rainbow City | 02/18/77 | 01/06/82 | 09/26/08 |
| 010253 | Town of Reece City | 02/21/75 | 02/01/91 | 09/26/08 |
| N/A | Town of Ridgeville | Non-participant. No areas within SFHA. | | |
| 010361 | Town of Sardis City | 09/17/76 | 01/01/87 | 09/26/08 |
| 010082 | City of Southside | 12/07/73 | 07/02/87 | 09/26/08 |
| 010252 | Town of Walnut Grove | 01/31/75 | 03/16/81 | 09/26/08 |

Action Plan

The priorities of goals for mitigation projects for tornadoes are: 1) life protection, 2) vital services protection, 3) property protection. Each jurisdiction’s actions for the goals are listed in order of prioritization in Figure 7.3. Each jurisdiction will administer its own mitigation projects. When mitigation grants become available to jurisdictions within Etowah County, the Hazard Mitigation Planning Committee will prioritize projects as a group. The final prioritization rankings will be done by committee vote. A special emphasis will be placed on projects which will garner the most benefit for cost, and which will benefit vulnerable populations.

Each jurisdiction will work on its individual projects throughout the life of this plan (five years). The cost will vary according to the scope of the work. Funds will be sought from local, state, and national sources. Locally, funds will be sought from local government budgets, local grants, businesses, and non-governmental organizations. Funds will be sought at the state level from state grants and budgets. Funds will be sought nationally from Federal grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Community Development Block Grants, among others). In addition, each jurisdiction will continue to enforce floodplain management requirements in Special Flood Hazard Areas (SFHA). Local jurisdictions will monitor its SFHA and request map updates, if necessary.

A review of each project will take place at the yearly mitigation plan review meeting. The review will focus on the accomplishing of goals related to floods. Changes in goals and actions may take place following these meetings.

Winter Storms

Goals

The goal of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan as it relates to winter storms is to reduce the effects of winter storms. The threat from winter storms cannot be eliminated, so the emphasis will be on:

1. Protecting life

2. Protecting vital services

3. Protecting property

Mitigation Actions

FIGURE 7.4 WINTER STORM MITIGATION GOALS AND ACTIONS

| Jurisdiction | Goal | Action(s) | Lead Organization(s) | Funding Source(s) | Timeframe |
|--------------|--------------|--|---|---|-----------|
| Altoona | Protect Life | <ol style="list-style-type: none"> Purchase and distribute weather radios for early warning of winter storms. Promote winter storm awareness and | <ol style="list-style-type: none"> Town of Altoona Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGF PDM EMPG | 5 years |

| | | | | | |
|---------|------------------------|---|---|---|---------|
| | | preparedness to protect lives through a comprehensive public information campaign. | | | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. Town of Altoona
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Attalla | Protect Life | 1. Purchase and distribute weather radios for early warning of winter storms.
2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | 1. City of Attalla
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and | 1. City of Attalla
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|---------------|------------------------|---|---|---|---------|
| | | wastewater treatment facilities.
2. Retrofit Attalla Fire Station #1 roof to protect facility against winter storms. | | | |
| | Protect Property | 1. Retrofit Attalla Recreation Center roof to protect facility against severe thunderstorms.
2. Retrofit roof at 4 th Street school. | 1. City of Attalla
2. Gadsden/
Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| Etowah County | Protect Life | 1. Purchase and distribute weather radios for early warning of winter storms.
2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | 1. Etowah County Commission
2. Gadsden/
Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as County buildings, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.
2. Remove trees and brush from right of way. | 1. Etowah County Commission
2. Gadsden/
Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Gadsden | Protect Life | 1. Purchase and distribute weather radios | 1. City of Gadsden
2. Gadsden/
Etowah County | <ul style="list-style-type: none"> Local budgets Community | 5 years |

| | | | | | |
|---------|------------------------|---|--|---|---------|
| | | <p>for early warning of winter storms.</p> <p>2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | EMA | <p>Development Funds</p> <ul style="list-style-type: none"> • HMGP • PDM • EMPG | |
| | Protect Vital Services | <p>1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.</p> <p>2. Conduct a street tree assessment project to address debris and trees from winter storms.</p> <p>3. Upgrade and purchase equipment to clear snow and ice covered roads.</p> | <p>1. City of Gadsden</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Glencoe | Protect Life | <p>1. Purchase and distribute weather radios for early warning of winter storms.</p> <p>2. Promote winter storm awareness and preparedness to protect lives through a</p> | <p>1. City of Glencoe</p> <p>2. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |

| | | | | | |
|-------------|------------------------|---|---|---|---------|
| | | comprehensive public information campaign. | | | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. City of Glencoe
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | |
| | Protect Property | None | N/A | N/A | N/A |
| Hokes Bluff | Protect Life | 1. Purchase and distribute weather radios for early warning of winter storms.
2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | 1. City of Hokes Bluff
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. City of Hokes Bluff
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |

| | | | | | |
|--------------|------------------------|--|--|---|---------|
| | | <ol style="list-style-type: none"> Retrofit Hokes Bluff City Hall roof to protect facility against winter storms. Upgrade and purchase equipment to clear snow and ice covered roads. | | | |
| | Protect Property | None | N/A | N/A | N/A |
| Rainbow City | Protect Life | <ol style="list-style-type: none"> Purchase and distribute weather radios for early warning of winter storms. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |
| | Protect Vital Services | <ol style="list-style-type: none"> Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. Retrofit Rainbow City Community Center/Library roof to protect facility against winter storms. | <ol style="list-style-type: none"> City of Rainbow City Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Reece City | Protect Life | <ol style="list-style-type: none"> Purchase and distribute | <ol style="list-style-type: none"> Town of Reece City | <ul style="list-style-type: none"> Local budgets | 5 years |

| | | | | | |
|------------|------------------------|---|---|---|---------|
| | | <p>weather radios for early warning of winter storms.</p> <p>2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | 2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> • Community Development Funds • HMGP • PDM • EMPG | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | <p>1. Town of Reece City</p> <p>2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Ridgeville | Protect Life | <p>1. Purchase and distribute weather radios for early warning of winter storms.</p> <p>2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign.</p> | <p>1. Town of Ridgeville</p> <p>2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal | <p>1. Town of Ridgeville</p> <p>2. Gadsden/
Etowah County
EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|-------------|------------------------|---|---|---|---------|
| | | buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities.
2. Retrofit Ridgeville Town Hall roof to protect facility against winter storms. | | | |
| | Protect Property | None | N/A | N/A | N/A |
| Sardis City | Protect Life | 1. Purchase and distribute weather radios for early warning of winter storms.
2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | 1. Town of Sardis City
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. Town of Sardis City
2. Gadsden/
Etowah County
EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Southside | Protect Life | 1. Purchase and distribute weather radios | 1. City of Southside
2. Gadsden/ | <ul style="list-style-type: none"> Local budgets Community | 5 years |

| | | | | | |
|--------------|------------------------|---|--|---|---------|
| | | for early warning of winter storms.
2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | Etowah County
EMA | Development Funds
• HMGP
• PDM | |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | 1. City of Southside
2. Gadsden/
Etowah County
EMA | • Local budgets
• Community Development Funds
• HMGP
• PDM | 5 years |
| | Protect Property | None | N/A | N/A | N/A |
| Walnut Grove | Protect Life | 1. Purchase and distribute weather radios for early warning of winter storms.
2. Promote winter storm awareness and preparedness to protect lives through a comprehensive public information campaign. | 1. Town of Walnut Grove
2. Gadsden/
Etowah County
EMA | • Local budgets
• Community Development Funds
• HMGP
• PDM | 5 years |
| | Protect Vital Services | 1. Purchase generators for backup power at critical infrastructure facilities, such as municipal buildings, fire | 1. Town of Walnut Grove
2. Gadsden/
Etowah County
EMA | • Local budgets
• Community Development Funds
• HMGP
• PDM | 5 years |

| | | | | | |
|--|------------------|--|-----|-----|-----|
| | | stations, law enforcement hubs, emergency operations centers, water plants, and wastewater treatment facilities. | | | |
| | Protect Property | None | N/A | N/A | N/A |

Action Plan

The priorities of goals for mitigation projects for winter storms are: 1) life protection, 2) vital services protection, 3) property protection. Each jurisdiction’s actions for the goals are listed in order of prioritization in Figure 7.4. Each jurisdiction will administer its own mitigation projects. When mitigation grants become available to jurisdictions within Etowah County, the Hazard Mitigation Planning Committee will prioritize projects as a group. The final prioritization rankings will be done by committee vote. A special emphasis will be placed on projects which will garner the most benefit for cost, and which will benefit vulnerable populations.

Each jurisdiction will work on its individual projects throughout the life of this plan (five years). The cost will vary according to the scope of the work. Funds will be sought from local, state, and national sources. Locally, funds will be sought from local government budgets, local grants, businesses, and non-governmental organizations. Funds will be sought at the state level from state grants and budgets. Funds will be sought nationally from Federal grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Community Development Block Grants, among others).

A review of each project will take place at the yearly mitigation plan review meeting. The review will focus on the accomplishing of goals related to winter storms. Changes in goals and actions may take place following these meetings.

Household Fires

Goals

The goal of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan as it relates to household fires is to reduce the effects of household fires. The emphasis will be on:

1. Protecting life

2. Protecting property

Mitigation Actions

FIGURE 7.5 HOUSEHOLD FIRE MITIGATION GOALS AND ACTIONS

| Jurisdiction | Goal | Action(s) | Lead Organization(s) | Funding Source(s) | Timeframe |
|--------------|------------------|--|--|---|-----------|
| Altoona | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for early warning of household fires. 2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Town of Altoona 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Town of Altoona 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |
| Attalla | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for early warning of household fires. 2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Attalla 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Attalla 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |

| | | | | | |
|---------------|------------------|--|---|---|---------|
| | | 2. Purchase and maintain fire equipment to control wildfires which may threaten residential areas. | | | |
| Etowah County | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for early warning of household fires. 2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Etowah County Commission 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. Etowah County Commission 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |
| Gadsden | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for early warning of household fires. 2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Gadsden 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote household fire prevention to protect property through a comprehensive public | <ol style="list-style-type: none"> 1. City of Gadsden 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |

| | | | | | |
|--------------|------------------|--|--|---|---------|
| | | information campaign. | | | |
| Glencoe | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for early warning of household fires. 2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Glencoe 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Glencoe 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |
| Hokes Bluff | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for early warning of household fires. 2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Hokes Bluff 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <ol style="list-style-type: none"> 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | <ol style="list-style-type: none"> 1. City of Hokes Bluff 2. American Red Cross 3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |
| Rainbow City | Protect Life | <ol style="list-style-type: none"> 1. Purchase and distribute smoke detectors for | <ol style="list-style-type: none"> 1. City of Rainbow City 2. American Red Cross | <ul style="list-style-type: none"> • Local budgets • Community Development | 2 years |

| | | | | | |
|------------|------------------|---|--|---|---------|
| | | <p>early warning of household fires.</p> <p>2. Promote household fire preparedness to protect lives through a comprehensive public information campaign.</p> | <p>3. Gadsden/ Etowah County EMA</p> | <p>Funds</p> <ul style="list-style-type: none"> • HMGP • PDM • EMPG • Assistance to Firefighters Grant | |
| | Protect Property | <p>1. Promote household fire prevention to protect property through a comprehensive public information campaign.</p> | <p>1. City of Rainbow City</p> <p>2. American Red Cross</p> <p>3. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |
| Ridgeville | Protect Life | <p>1. Purchase and distribute smoke detectors for early warning of household fires.</p> <p>2. Promote household fire preparedness to protect lives through a comprehensive public information campaign.</p> | <p>1. Town of Ridgeville</p> <p>2. American Red Cross</p> <p>3. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters Grant | 2 years |
| | Protect Property | <p>1. Promote household fire prevention to protect property through a comprehensive public information campaign.</p> | <p>1. Town of Ridgeville</p> <p>2. American Red Cross</p> <p>3. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • EMPG • Assistance to Firefighters Grant | 2 years |
| Reece City | Protect Life | <p>1. Purchase and distribute smoke detectors for early warning of household fires.</p> <p>2. Promote household fire preparedness to</p> | <p>1. Town of Reece City</p> <p>2. American Red Cross</p> <p>3. Gadsden/ Etowah County EMA</p> | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM • EMPG • Assistance to Firefighters | 2 years |

| | | | | | |
|-------------|------------------|--|--|---|---------|
| | | protect lives through a comprehensive public information campaign. | | Grant | |
| | Protect Property | 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | 1. Town of Reece City
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Assistance to Firefighters Grant | 2 years |
| Sardis City | Protect Life | 1. Purchase and distribute smoke detectors for early warning of household fires.
2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | 1. Town of Sardis City
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG Assistance to Firefighters Grant | 2 years |
| | Protect Property | 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | 1. Town of Sardis City
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Assistance to Firefighters Grant | 2 years |
| Southside | Protect Life | 1. Purchase and distribute smoke detectors for early warning of household fires.
2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | 1. City of Southside
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG Assistance to Firefighters Grant | 2 years |

| | | | | | |
|--------------|------------------|--|---|---|---------|
| | Protect Property | 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | 1. City of Southside
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Assistance to Firefighters Grant | 2 years |
| Walnut Grove | Protect Life | 1. Purchase and distribute smoke detectors for early warning of household fires.
2. Promote household fire preparedness to protect lives through a comprehensive public information campaign. | 1. Town of Walnut Grove
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets Community Development Funds HMGP PDM EMPG Assistance to Firefighters Grant | 2 years |
| | Protect Property | 1. Promote household fire prevention to protect property through a comprehensive public information campaign. | 1. Town of Walnut Grove
2. American Red Cross
3. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> Local budgets EMPG Assistance to Firefighters Grant | 2 years |

Action Plan

The priorities of goals for mitigation projects for household fires are: 1) life protection, and 2) property protection. Each jurisdiction’s actions for the goals are listed in order of prioritization in Figure 7.5. Each jurisdiction will administer its own mitigation projects. When mitigation grants become available to jurisdictions within Etowah County, the Hazard Mitigation Planning Committee will prioritize projects as a group. The final prioritization rankings will be done by committee vote. A special emphasis will be placed on projects which will garner the most benefit for cost, and which will benefit vulnerable populations.

Each jurisdiction will work on its individual projects throughout the life of this plan (five years). The cost will vary according to the scope of the work. Funds will be sought from local, state, and national sources. Locally, funds will be sought from local government budgets, local grants, businesses, and non-governmental organizations. Funds will be sought at the state level from state grants and budgets. Funds will be sought nationally from Federal grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Community Development Block Grants, among others).

A review of each project will take place at the yearly mitigation plan review meeting. The review will focus on the accomplishing of goals related to household fires. Changes in goals and actions may take place following these meetings.

Landslides and Sinkholes

Goals

The goal of the Etowah County Multi-Jurisdictional Hazard Mitigation Plan as it relates to landslides and sinkholes is to reduce the effects of landslides and sinkholes. The threat from tornadoes can be controlled, but not completely eliminated. The emphasis will be on:

1. Protecting property

Mitigation Actions

FIGURE 7.6 TORNADO MITIGATION GOALS AND ACTIONS

| Jurisdiction | Goal | Action(s) | Lead Organization(s) | Funding Source(s) | Timeframe |
|---------------|------------------|---|--|---|-----------|
| Altoona | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. Town of Altoona 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Attalla | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. City of Attalla 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Etowah County | Protect Property | <ol style="list-style-type: none"> 1. Fortify Whorton Bend Road stream bank with a riprap project. 2. Mitigate slope failure on Wesson Gap Road. 3. Enact erosion control measures in areas which are subject to landslides and sinkholes. 4. Purchase equipment to mitigate areas which are subject to | <ol style="list-style-type: none"> 1. Etowah County Commission 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|--------------|------------------|---|--|---|---------|
| | | landslides and sinkholes. | | | |
| Gadsden | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. City of Gadsden 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Glencoe | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. City of Glencoe 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Hokes Bluff | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. City of Hokes Bluff 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Rainbow City | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to | <ol style="list-style-type: none"> 1. City of Rainbow City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | | | | |
|-------------|------------------|---|---|---|---------|
| | | landslides and sinkholes. | | | |
| Ridgeville | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. Town of Ridgeville 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Reece City | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. Town of Reece City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Sardis City | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. Town of Sardis City 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |
| Southside | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to | <ol style="list-style-type: none"> 1. City of Southside 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

| | | landslides and sinkholes. | | | |
|--------------|------------------|---|--|---|---------|
| Walnut Grove | Protect Property | <ol style="list-style-type: none"> 1. Enact erosion control measures in areas which are subject to landslides and sinkholes. 2. Purchase equipment to mitigate areas which are subject to landslides and sinkholes. | <ol style="list-style-type: none"> 1. Town of Walnut Grove 2. Gadsden/ Etowah County EMA | <ul style="list-style-type: none"> • Local budgets • Community Development Funds • HMGP • PDM | 5 years |

Action Plan

The priority of goals for mitigation projects for landslides and sinkholes is property protection. Each jurisdiction’s actions for the goals are listed in order of prioritization in Figure 6.6. Each jurisdiction will administer its own mitigation projects. When mitigation grants become available to jurisdictions within Etowah County, the Hazard Mitigation Planning Committee will prioritize projects as a group. The final prioritization rankings will be done by committee vote. A special emphasis will be placed on projects which will garner the most benefit for cost, and which will benefit vulnerable populations.

Each jurisdiction will work on its individual projects throughout the life of this plan (five years). The cost will vary according to the scope of the work. Funds will be sought from local, state, and national sources. Locally, funds will be sought from local government budgets, local grants, businesses, and non-governmental organizations. Funds will be sought at the state level from state grants and budgets. Funds will be sought nationally from Federal grants (Hazard Mitigation Grant Program, Pre-Disaster Mitigation grant program, and Community Development Block Grants, among others).

A review of each project will take place at the yearly mitigation plan review meeting. The review will focus on the accomplishing of goals related to landslides and sinkholes. Changes in goals and actions may take place following these meetings.

SECTION 8: PLAN MAINTENANCE PROCESS

Section 8 addresses the maintenance of the plan. This includes monitoring, evaluating, and updating the plan, and reviewing progress of mitigation measures and projects.

Monitoring, Evaluating, and Updating the Plan

The Gadsden/Etowah County Emergency Management Agency will be in charge of maintaining the Etowah County Multi-Jurisdictional Hazard Mitigation Plan. This includes all monitoring, evaluating, and updating activities. The Planner of the Gadsden/Etowah County Emergency Management Agency, under guidance of the Director, will lead the monitoring, evaluating, and updating efforts.

The Hazard Mitigation Planning Committee will be convened every year on the first Tuesday in June to evaluate the plan. At this meeting, the committee will review the plan, and decide if the goals and projects are still valid. Any changes to the plan will be made by the Gadsden/Etowah County Emergency Management Agency, upon approval from the committee. A special meeting of the Hazard Mitigation Planning Committee may be called by a member of the committee should:

- A change in risk level or type occurs
- A change in plan requirements occurs
- A change in funding sources occurs

A special meeting of the committee may also take place following a Presidentially Declared Disaster. This meeting will focus on changes in the plan that may need to be made due to the impact of the hazard event. It will also focus on project prioritization for Hazard Mitigation Grant Program (HMGP) funds, should they be available to Etowah County.

The yearly meeting of the Hazard Mitigation Planning Committee will be a public meeting. Notice of the meeting will be made available to the public a week in advance through traditional and social media. Public input in the evaluation and updating of the plan is important, and will be encouraged.

Reviewing Progress of Mitigation Measures and Projects

Each jurisdiction will be responsible for reviewing its measures and projects. At the yearly meeting of the Hazard Mitigation Planning Committee (see Section 7, Part I), the committee a roundtable discussion will be held on each jurisdiction's progress in implementing its mitigation measures and projects. A discussion of best practices and lessons learned will take place to assist other jurisdictions in completing their projects. The Gadsden/Etowah County Emergency Management Agency will be in charge of documenting progress of mitigation measures and projects into the plan.

The yearly meeting of the Hazard Mitigation Planning Committee will be a public meeting. Notice of the meeting will be made available to the public a week in advance through traditional and social media. Public input in the evaluation and updating of the plan is important, and will be encouraged. The plan will remain on the Gadsden/Etowah County Emergency Management Agency website (www.GECEMA.com) for familiarization for the public, and an opportunity for

public review and comments. Input from the public will be important to keeping the plan relevant and up-to-date during its five-year life span.

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Annex B: Acronyms

| Acronym | Meaning |
|---------|---|
| CAD | Cold Air Damming |
| CRS | Community Rating System |
| ESF | Enhanced Fujita Scale |
| FEMA | Federal Emergency Management Agency |
| FIRMs | Flood Insurance Rate Maps |
| FMA | Flood Mitigation Assistance Program |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| NFIP | National Flood Insurance Program |
| NOAA | National Oceanic and Atmospheric Administration |
| PDM | Pre-Disaster Mitigation Program |
| PIO | Public Information Officer |
| PSA | Public Service Announcement |
| SFHA | Special Flood Hazard Area |
| SHMO | State Hazard Mitigation Officer |

Annex C. Public Questionnaire

The following survey was created using guidance from “FEMA 386-1: Getting Started, Building Support for Mitigation Planning.” Paper copies of the form were made available at public places. An electronic copy of this survey was put online using Google Forms. It was distributed via Twitter and Facebook to the public.

Dear Resident,

We need your help! Etowah County is embarking on an initiative to assist communities in reducing risk from hazards. The Etowah County Mitigation Planning Committee is now providing citizens or organizations communitywide with an opportunity to prepare for and minimize the impact of natural hazards.

This questionnaire is designed to help us understand household preparedness for disasters. We are developing a strategic plan to prioritize activities to assist the community to reduce their risk from natural and manmade disasters. The information you provide about your needs for disaster preparedness will help improve coordination of preparedness and risk reduction activities within the community.

Your returned survey indicates your willingness to take part in the study. Your participation is voluntary. If you have questions regarding your rights as a research participant, please contact Michael Amberson with the Gadsden/Etowah County Emergency Management Agency at 256-549-4575. All individual survey responses are strictly confidential, and are for research purposes only.

Your opinions are important to us. Please return your completed survey no later than **January 16, 2015**.

If you have questions regarding the survey, feel free to contact the Gadsden/Etowah County Emergency Management Agency at 256-549-4575

Thanks for your participation!

Sincerely,

The Etowah County Hazard Mitigation Planning Committee

Household Natural Hazard Preparedness Questionnaire

Thank you for taking the time to answer this questionnaire and participating in the Etowah County Hazard Mitigation Planning Committee's planning process. This questionnaire is designated to help Etowah County gauge household preparedness for disasters and knowledge of tools and techniques that assist in reducing risk and loss from natural hazards. The information you provide about your needs for disaster preparedness will help improve public/private coordination of preparedness and risk reduction activities within the community. We ask that you please take a few minutes to complete this questionnaire.

NATURAL HAZARD INFORMATION

1. In the past five years have you or someone in your household experienced a natural disaster such as a severe windstorm, tornado, flood, or other natural hazards?

- Yes
- No **(If no, skip to Question 2)**

1.1. If "YES", which of these natural disasters have you or someone in your household experienced?

- Drought
- Flood
- Household Fire
- Landslide
- Severe Windstorm
- Tornado
- Winter Storm
- Other (specify) _____

2. How concerned are you personally with the following natural disasters occurring in our community? **(circle the corresponding number for each hazard)**

| Natural Disaster | Extremely Concerned | Very Concerned | Concerned | Somewhat Concerned | Not Concerned |
|------------------|---------------------|----------------|-----------|--------------------|---------------|
| Drought | 1 | 2 | 3 | 4 | 5 |
| Dust Storm | 1 | 2 | 3 | 4 | 5 |
| Earthquake | 1 | 2 | 3 | 4 | 5 |
| Flood | 1 | 2 | 3 | 4 | 5 |
| Household Fire | 1 | 2 | 3 | 4 | 5 |
| Severe Windstorm | 1 | 2 | 3 | 4 | 5 |
| Tornado | 1 | 2 | 3 | 4 | 5 |
| Other | 1 | 2 | 3 | 4 | 5 |

3. Have you ever received information about how to make your family and home safer from natural disaster?

- Yes
- No **(IF NO, skip to question 4)**

3.1. If "YES", how recently?

- Within last 6 months
- Between 6 and 12 months
- Between 1 and 2 years
- Between 2 and 5 years
- 5 years or more

3.2. From whom did you last receive information about how to make your family and home safer from natural disasters? **(Please check only one)**

- News media
- Government agency
- Insurance agent or company
- Utility company
- American Red Cross
- Other non-profit organization
- Not sure
- Other _____

4. Who would you most trust to provide you with information about how to make your family and home safer from natural disasters? **(Please check all that apply)**

- News media
- Government agency
- Insurance agent or company
- Utility company
- American Red Cross
- Other non-profit organization
- Not sure
- Other _____

5. What is the most effective way for you to receive information about how to make your family and home safer from natural disasters? **(Please check all that apply)**

Newspapers:

- Newspaper stories
- Newspaper ads

Television:

- Television news
- Television ads

Radio:

- Radio news
- Radio ads

Internet:

- Website or blog
- Facebook
- Twitter
- You Tube
- Other _____

Other methods:

- Schools
- Mail
- Fire Department
- Fact sheet/brochure
- Chamber of Commerce
- Public meetings
- Other _____

6. To assist in communicating information to the community about how to better prepare for a natural disaster, which of the following phrases do you think is easiest to understand? **(Please check only one)**
- Natural disaster readiness
 - Disaster preparedness
 - Emergency preparedness
 - Natural hazard risk reduction
 - Other _____

There are many things that you can do to prepare for a natural disaster or emergency event. What you have on hand when a disaster strikes, or are trained to do when a disaster strikes can make a big difference for your comfort and safety in the hours and days following the disaster, whether it is a natural disaster or other emergency. Basic services, such as electricity, gas, water and telephones, may be cut off, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

7. In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. (Please check one answer for each preparedness activity)

In your household, you or someone in your household:

| Preparedness activity | Have Done | Plan to Do | Not Done | Unable to Do |
|---|------------------|-------------------|-----------------|---------------------|
| Attended meetings or received written information on natural disasters or emergency preparedness? | | | | |
| Talked with members in your household about what to do in case of a natural disaster or emergency? | | | | |
| Developed an emergency plan in order to decide what everyone would do in the event of a household emergency? | | | | |
| Prepared an emergency supply kit (Stored extra food, water, batteries, or other emergency supplies)? | | | | |
| In the last year, has anyone in your household trained in first aid or Cardio-Pulmonary resuscitation (CPR)? | | | | |

8. Building an emergency supply kit, receiving first aid training and developing an emergency plan are inexpensive activities that require a personal time constraint. How much time (per year) are you willing to spend on preparing for a natural disaster or emergency?
- 0-1 hour
 - 2-3 hours
 - 4-7 hours
 - 8-15 hours
 - 16+ hours

9. What steps, if any, have you or someone in your household taken to prepare for natural disaster?
(Check all that apply)

Have stored or stocked up on:

- | | |
|---|--|
| <input type="checkbox"/> Food | <input type="checkbox"/> Prepared an Emergency Supply Kit |
| <input type="checkbox"/> Water | <input type="checkbox"/> Received First Aid/CPR Training |
| <input type="checkbox"/> Flashlight(s) | <input type="checkbox"/> Made a fire escape plan |
| <input type="checkbox"/> Batteries | <input type="checkbox"/> Developed a reconnection plan:
Where to go and who to call |
| <input type="checkbox"/> Battery-powered radio | <input type="checkbox"/> Discussed utility shutoffs |
| <input type="checkbox"/> Medical supplies (First aid kit) | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Fire extinguisher | |
| <input type="checkbox"/> Smoke detector on each level of
the house | |

10. Does your household have insurance coverage for flood events?

- Yes **(If you answered YES skip to Question 11)**
 No

10.1. If "NO", what is the main reason your household does not have insurance for flood events?
(Please check only one)

- | | |
|--|---|
| <input type="checkbox"/> Not located in the floodplain | <input type="checkbox"/> Deductibles too high/not worth it |
| <input type="checkbox"/> Too expensive | <input type="checkbox"/> Not familiar with it/ don't know
about it |
| <input type="checkbox"/> Not necessary | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Never considered it | |

11. Does your household have insurance coverage for earthquake events?

- Yes **(If you answered YES skip to Question 12)**
 No

11.1. If "NO", what is the main reason your household does not have earthquake insurance?
(Please check only one)

- Too expensive
- Not available
- Not necessary
- Never considered it
- Deductibles too high/not worth it
- Not familiar with it/don't know about it
- Other _____

NATURAL HAZARD RISK REDUCTION

Risk reduction activities are those actions you can take to protect your home from natural hazard events, such as tornadoes, floods, and wildfires. You can do nonstructural modifications or retrofits to protect your home's contents against damage, often at minimal cost. You can also conduct structural retrofits to strengthen your home's structure or skeleton, although modifications to a structure tend to be quite involved and generally require the expertise of a registered design professional (engineer, architect or building contractor).

12. Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?

- Yes
- No

13. Would you be willing to spend more money on a home that had features that made it more disaster resistant?

- Yes
- No

14. How much more money are you willing to spend to better protect your family and home from natural disasters? (**Check only one**)

- \$5000 and above
- \$2500 - \$4900
- \$1000 - \$2499
- \$500 - \$999
- \$100 - \$499
- Less than \$100
- Nothing

- Don't know
- Other, please explain

GENERAL HOUSEHOLD INFORMATION

15. Please indicate your age: _____

16. Gender

- Male
- Female

17. Please indicate your level of education:

- Grade school/no schooling
- Some high school
- High school graduate/GED
- Some college/trade school
- College degree
- Postgraduate degree
- Other

18. Zip code: _____

19. City: _____

20. How long have you lived in Etowah County?

- Less than one year
- 1-5 years
- 5-9 years
- 10-19 years
- 20 years or more

21. Do you have access to the internet?

- Yes
- No

22. Do you own or rent your home?

- Own
- Rent

23. Do you own/rent a:

- Single-family home
- Duplex
- Apartment (3-4 units in structure)
- Apartment (5 or more units in structure)
- Condominium or townhouse
- Manufacture home
- Other _____

Other Comments:

THANK YOU VERY MUCH FOR PROVIDING THIS INFORMATION

The Gadsden/Etowah County Emergency Management Agency prepared this survey for the Etowah County Hazard Mitigation Planning Committee

For more information on this survey, please contact Michael Amberson with the Gadsden/Etowah County Emergency Management Agency at:

*PO Box 267, Gadsden, AL 35902
256-549-4575
michaelamberson@cityofgadsden.com*

For more information on mitigation and preparedness please visit the following websites

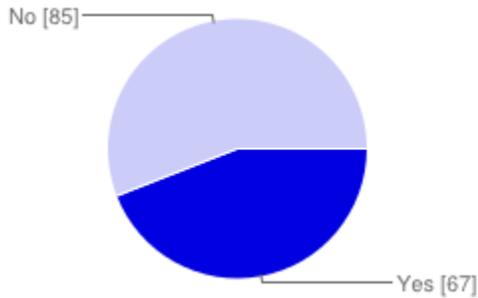
- www.GECEMA.com
- www.readyalabama.gov
- www.ready.gov

Annex D. Public Questionnaire Results

NATURAL HAZARDS INFORMATION

Question 1

In the past five years, have you or someone in your household experienced a natural disaster such as a severe windstorm, tornado, flood, or other natural hazard?



Yes **67** 44.1%

No **85** 55.9%

Question 1.1

Which of these natural disasters have you or someone in your household experienced?

| | | |
|------------------|-----------|-------|
| Drought | 4 | 2.6% |
| Flood | 5 | 3.3% |
| Household Fire | 5 | 3.3% |
| Landslide | 0 | 0% |
| Severe Windstorm | 34 | 22.4% |
| Tornado | 32 | 21.1% |
| Winter Storm | 37 | 24.3% |
| Other | 2 | 1.3% |

Question 2

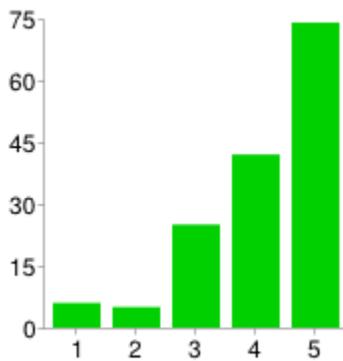
Drought

| | | |
|---|-----------|-------|
| 1 | 6 | 3.9% |
| 2 | 14 | 9.2% |
| 3 | 37 | 24.3% |
| 4 | 47 | 30.9% |
| 5 | 48 | 31.6% |

Dust Storm

| | | |
|---|------------|-------|
| 1 | 8 | 5.3% |
| 2 | 2 | 1.3% |
| 3 | 12 | 7.9% |
| 4 | 26 | 17.1% |
| 5 | 104 | 68.4% |

Earthquake



| | | |
|---|----------|------|
| 1 | 6 | 3.9% |
| 2 | 5 | 3.3% |

3 **25** 16.4%

4 **42** 27.6%

5 **74** 48.7%

Flood

1 **5** 3.3%

2 **21** 13.8%

3 **47** 30.9%

4 **36** 23.7%

5 **43** 28.3%

Household Fire

1 **42** 27.6%

2 **27** 17.8%

3 **33** 21.7%

4 **22** 14.5%

5 **28** 18.4%

Severe Windstorm

1 **31** 20.4%

2 **41** 27%

3 **37** 24.3%

4 **19** 12.5%

5 **24** 15.8%

Tornado

1 **62** 40.8%

2 **27** 17.8%

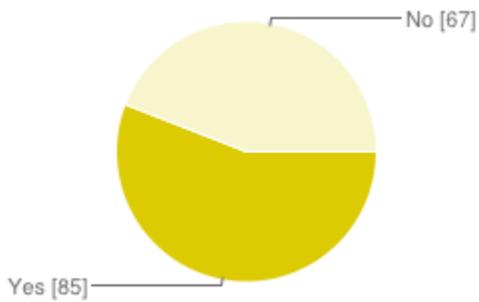
3 **26** 17.1%

4 **11** 7.2%

5 **26** 17.1%

Question 3

Have you ever received information about how to make your family and home safer from natural disasters?

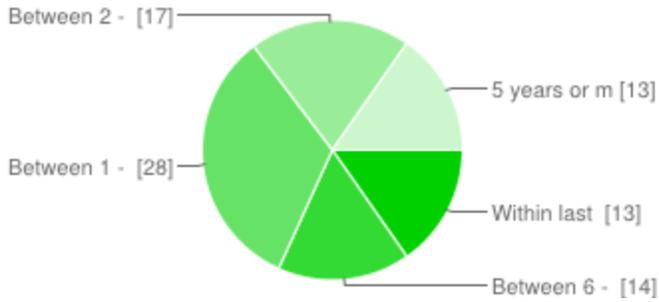


Yes **85** 55.9%

No **67** 44.1%

Question 3.1

How recently?



| | | |
|-----------------------|-----------|-------|
| Within last 6 months | 13 | 8.6% |
| Between 6 - 12 months | 14 | 9.2% |
| Between 1 - 2 years | 28 | 18.4% |
| Between 2 - 5 years | 17 | 11.2% |
| 5 years or more | 13 | 8.6% |

Question 3.2

From whom did you last receive information about how to make your family and home safer from natural disasters?

| | | |
|-------------------------------|-----------|-------|
| News media | 39 | 25.7% |
| Government agency | 24 | 15.8% |
| Insurance agency or company | 16 | 10.5% |
| Utility company | 7 | 4.6% |
| American Red Cross | 9 | 5.9% |
| Other non-profit organization | 5 | 3.3% |
| Not sure | 12 | 7.9% |
| Other | 7 | 4.6% |

Question 4

Who would you most trust to provide you with information about how to make your family and home safer from natural disasters?

| | | |
|--------------------------------|-----------|-------|
| News Media | 53 | 34.9% |
| Government agency | 36 | 23.7% |
| Insurance agent or company | 31 | 20.4% |
| Utility company | 27 | 17.8% |
| American Red Cross | 52 | 34.2% |
| Other non-profit organizations | 21 | 13.8% |
| Not sure | 25 | 16.4% |
| Other | 13 | 8.6% |

Question 5

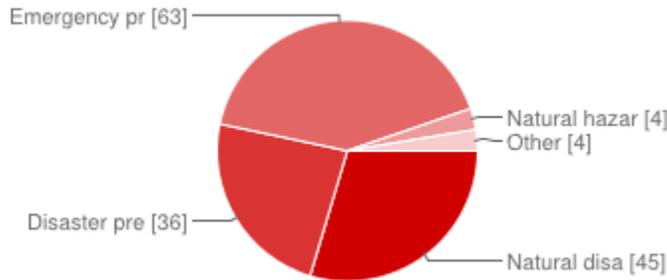
What is the most effective way for you to receive information about how to make your family and home safer from natural disasters?

| | | |
|-------------------|-----------|-------|
| Newspaper stories | 43 | 28.3% |
| Newspaper ads | 14 | 9.2% |
| Television news | 88 | 57.9% |
| Television ads | 22 | 14.5% |
| Radio news | 65 | 42.8% |
| Radio ads | 19 | 12.5% |
| Website or blog | 53 | 34.9% |
| Facebook | 71 | 46.7% |

| | | |
|---------------------|-----------|-------|
| Twitter | 12 | 7.9% |
| You Tube | 11 | 7.2% |
| Schools | 27 | 17.8% |
| Fire Department | 32 | 21.1% |
| Fact sheet/brochure | 34 | 22.4% |
| Chamber of Commerce | 11 | 7.2% |
| Public Meetings | 18 | 11.8% |
| Other | 20 | 13.2% |

Question 6

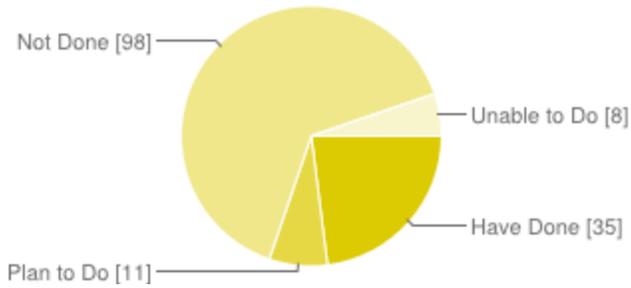
To assist in communicating information to the community about how to better prepare for a natural disaster, which of the following phrases do you think is easiest to understand?



| | | |
|-------------------------------|-----------|-------|
| Natural disaster readiness | 45 | 29.6% |
| Disaster preparedness | 36 | 23.7% |
| Emergency preparedness | 63 | 41.4% |
| Natural hazard risk reduction | 4 | 2.6% |
| Other | 4 | 2.6% |

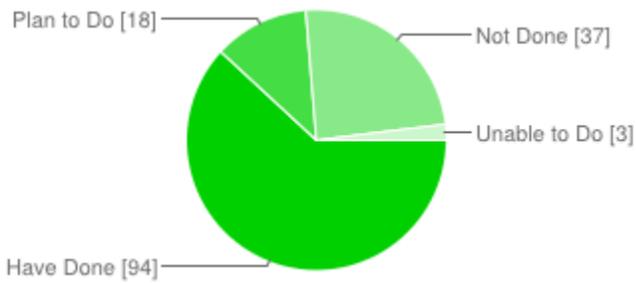
Question 7

Attended meetings or received written information on natural disasters or emergency preparedness?



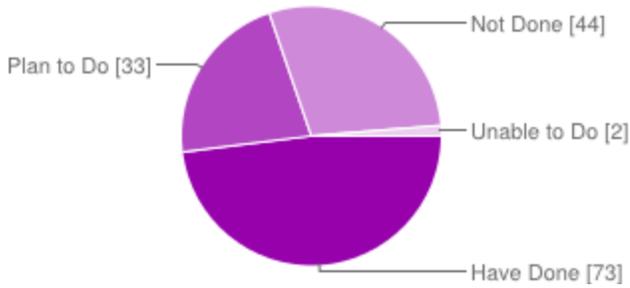
| | | |
|--------------|-----------|-------|
| Have Done | 35 | 23% |
| Plan to Do | 11 | 7.2% |
| Not Done | 98 | 64.5% |
| Unable to Do | 8 | 5.3% |

Talked with members in your household about what to do in case of a natural disaster or emergency?



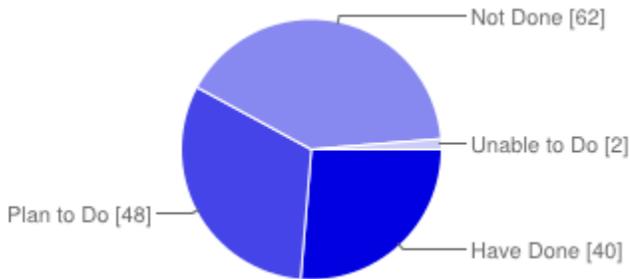
| | | |
|--------------|-----------|-------|
| Have Done | 94 | 61.8% |
| Plan to Do | 18 | 11.8% |
| Not Done | 37 | 24.3% |
| Unable to Do | 3 | 2% |

Developed an emergency plan in order to decide what everyone would do in the event of a household emergency?



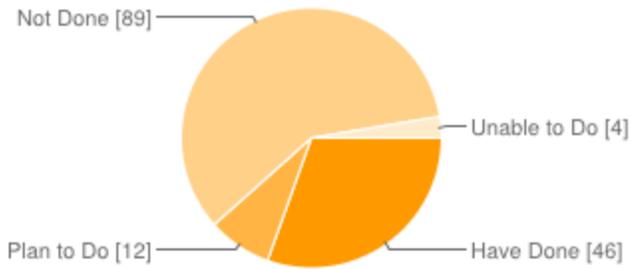
| | | |
|--------------|-----------|-------|
| Have Done | 73 | 48% |
| Plan to Do | 33 | 21.7% |
| Not Done | 44 | 28.9% |
| Unable to Do | 2 | 1.3% |

Prepared an emergency supply kit (<http://www.ready.gov/document/family-supply-list>)?



| | | |
|--------------|-----------|-------|
| Have Done | 40 | 26.3% |
| Plan to Do | 48 | 31.6% |
| Not Done | 62 | 40.8% |
| Unable to Do | 2 | 1.3% |

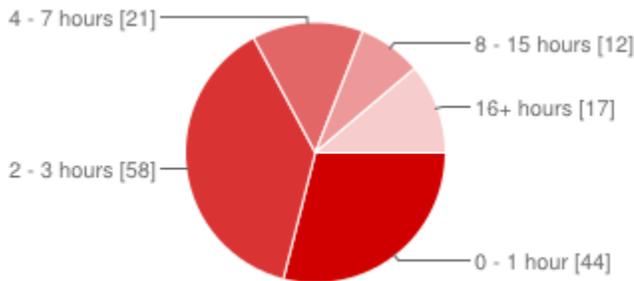
In the last year, has anyone in your household trained in first aid or Cardio-Pulmonary resuscitation (CPR)?



| | | |
|--------------|-----------|-------|
| Have Done | 46 | 30.3% |
| Plan to Do | 12 | 7.9% |
| Not Done | 89 | 58.6% |
| Unable to Do | 4 | 2.6% |

Question 8

Building an emergency supply kit, receiving first aid training and developing an emergency plan are inexpensive activities that require a personal time constraint. How much time (per year) are you willing to spend on preparing for a natural disaster or emergency?



| | | |
|--------------|-----------|-------|
| 0 - 1 hour | 44 | 28.9% |
| 2 - 3 hours | 58 | 38.2% |
| 4 - 7 hours | 21 | 13.8% |
| 8 - 15 hours | 12 | 7.9% |
| 16+ hours | 17 | 11.2% |

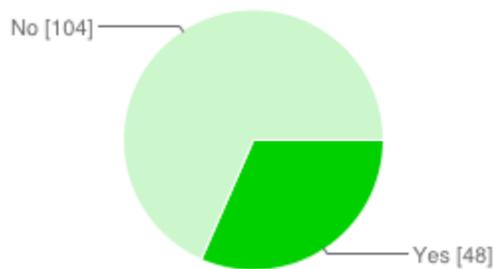
Question 9

What steps, if any, have you or someone in your household taken to prepare for natural disasters?

| | | |
|--|------------|-------|
| Food | 78 | 51.3% |
| Water | 74 | 48.7% |
| Flashlight(s) | 109 | 71.7% |
| Batteries | 97 | 63.8% |
| Battery-powered radio | 67 | 44.1% |
| First-aid Kit | 66 | 43.4% |
| Fire extinguisher | 70 | 46.1% |
| Smoke detector on each level of the house | 99 | 65.1% |
| Prepared an Emergency Supply Kit | 37 | 24.3% |
| Received First-Aid/CPR Training | 45 | 29.6% |
| Made a fire escape plan | 51 | 33.6% |
| Developed a reconnection plan: Where to go and who to call | 35 | 23% |
| Discussed utility shutoffs | 25 | 16.4% |
| Other | 13 | 8.6% |

Question 10

Does your household have insurance coverage for flood events?



Yes **48** 31.6%

No **104** 68.4%

Question 10.1

What is the main reason your household does not have insurance for flood events?

Not located in the floodplain **52** 34.2%

Too expensive **12** 7.9%

Not necessary **9** 5.9%

Never considered it **12** 7.9%

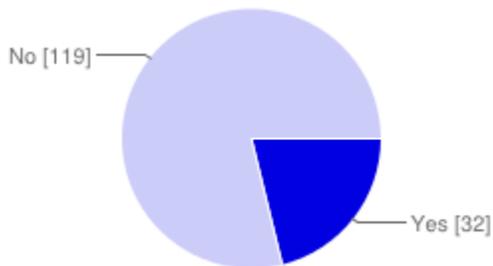
Deductibles too high/not worth it **2** 1.3%

Not familiar with it/don't know about it **10** 6.6%

Other **7** 4.6%

Question 11

Does your household have insurance for earthquake events?



Yes **32** 21.1%

No **119** 78.3%

Question 11.1

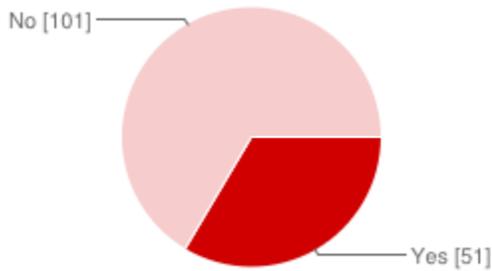
What is the main reason your household does not have earthquake insurance?

| | | |
|--|-----------|-------|
| Too expensive | 9 | 5.9% |
| Not available | 10 | 6.6% |
| Not necessary | 33 | 21.7% |
| Never considered it | 42 | 27.6% |
| Deductibles too high/not worth it | 0 | 0% |
| Not familiar with it/don't know about it | 17 | 11.2% |
| Other | 9 | 5.9% |

NATURAL HAZARD RISK REDUCTION

Question 12

Did you consider the possible occurrence of a natural hazard when you bought/moved into your current home?

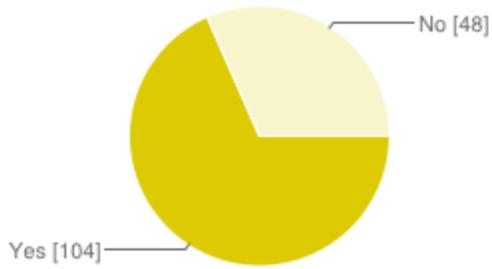


Yes **51** 33.6%

No **101** 66.4%

Question 13

Would you be willing to spend more money on a home that had features that made it more disaster resistant?



Yes **104** 68.4%

No **48** 31.6%

Question 14

How much more money are you willing to spend to better protect your family and home from natural disasters?

\$5000 and above **17** 11.2%

\$2500 - \$4900 **10** 6.6%

\$1000 - \$2499 **16** 10.5%

\$500 - \$999 **17** 11.2%

\$100 - \$499 **14** 9.2%

Less than \$100 **6** 3.9%

Nothing **20** 13.2%

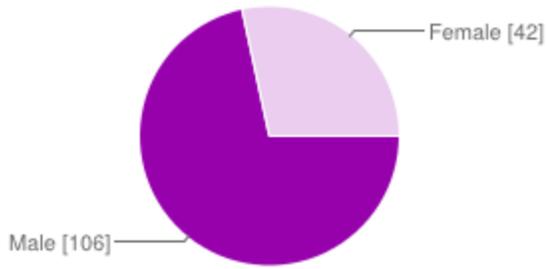
Don't know **52** 34.2%

Other **0** 0%

GENERAL HOUSEHOLD INFORMATION

Question 16

Gender



Male **106** 69.7%

Female **42** 27.6%

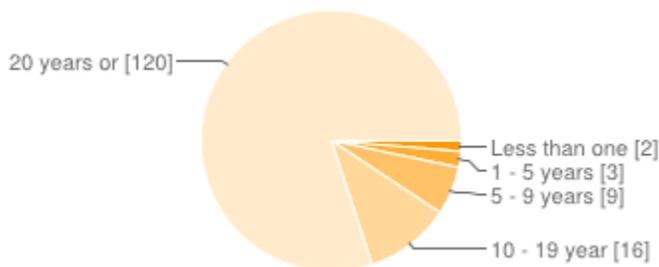
Question 17

Please indicate your level of education

| | | |
|---------------------------|-----------|-------|
| Grade school/no schooling | 2 | 1.3% |
| Some high school | 8 | 5.3% |
| High school graduate/GED | 51 | 33.6% |
| Some college/trade school | 45 | 29.6% |
| College degree | 31 | 20.4% |
| Postgraduate degree | 11 | 7.2% |
| Other | 0 | 0% |

Question 20

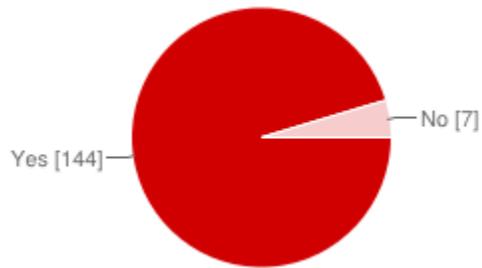
How long have you lived in Etowah County?



| | | |
|--------------------|------------|-------|
| Less than one year | 2 | 1.3% |
| 1 - 5 years | 3 | 2% |
| 5 - 9 years | 9 | 5.9% |
| 10 - 19 years | 16 | 10.5% |
| 20 years or more | 120 | 78.9% |

Question 21

Do you have access to the internet?

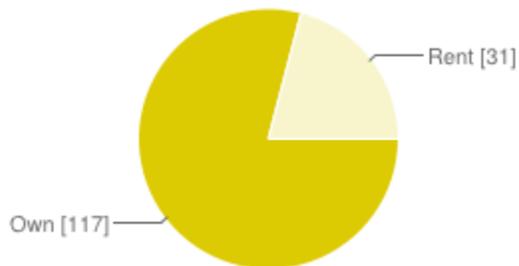


Yes **144** 94.7%

No **7** 4.6%

Question 22

Do you own or rent your home?



Own **117** 77%

Rent **31** 20.4%

Question 23

Do you own/rent a:

| | | |
|--|------------|-------|
| Single-family home | 117 | 77% |
| Duplex | 4 | 2.6% |
| Apartment (3 - 4 units in structure) | 7 | 4.6% |
| Apartment (5 or more units in structure) | 2 | 1.3% |
| Condominium or townhouse | 2 | 1.3% |
| Manufactured home | 16 | 10.5% |
| Other | 3 | 2% |

Annex D. Status of Previous Goals and Actions

TOWN OF ALTOONA

Drainage Improvements at the intersection of 2nd and College Streets

Estimated Time Frame: 5 Years

Estimated Cost: \$100,000.00

Funding Source: DoT, CDBG, HMGP, PDM

Status: This project has not been completed. The Town of Altoona remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

6th Avenue Drainage Improvements

Estimated Time Frame: 5 Years

Estimated Cost: \$150,000.00

Funding Source: DoT, CDBG, HMGP, PDM

Status: This project has not been completed. The Town of Altoona remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

CITY OF ATTALLA

Drainage Improvements in Selected Areas:

- Hannah Ave to Brown Ave
- Burke Ave
- 1st St to 5th Ave
- Underpass 5th Ave
- 800-1000 block W 5th Ave
- 3rd St S between 3rd and 7th Ave

Estimated Time Frame: 5 Years

Estimated Cost: \$500,000

Funding Source: DoT, CDBG, HMGP, PDM

Status: These projects have not been completed. The City of Attalla remains interested in completing these projects. They have been included in the Goals and Actions subsection for floods in this plan.

4th St School Roof Retrofitting

Estimated Time Frame: 5 Years

Estimated Cost: \$50,000.00

Funding Source: CDBG, PDM

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms and winter storms in this plan.

Address drainage at Attalla Country Club Golf Course

Estimated Time Frame: 10 Years

Estimated Cost: \$20,000.00

Funding Source: HMGP, FMA

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Highway 77 City Park Drainage Improvements

Estimated Time Frame: 5 Years

Estimated Cost: \$250,000.00

Funding Source: DoT, CDBG, HMGP, PDM

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Recreation Center Roof Retrofitting

Estimated Time Frame: 5 Years

Estimated Cost: \$50,000.00

Funding Source: CDBG, PDM

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms and winter storms in this plan.

Fire Department Station 1 Roof Retrofitting

Estimated Time Frame: 3 Years

Estimated Cost: \$50,000.00

Funding Source: CDBG, PDM, DoJ

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms and winter storms in this plan.

Improve drainage at American Legion and Fair Grounds

Estimated Time Frame: 5 Years

Estimated Cost: \$20,000.00

Funding Source: HMGP, FMA

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms in this plan.

Installation of Community Storm Shelter

Estimated Time Frame: 3 Years

Estimated Cost: \$25,000.00

Funding Source: HMGP, PDM

Status: This project has not been completed. The City of Attalla remains interested in completing this project. It has been included in the Goals and Actions subsection for tornadoes in this plan. The goal is now to install multiple storm shelters (also known as safe rooms).

ETOWAH COUNTY

Construction of Individual Storm Shelters in Etowah County

Estimated Time Frame: ASAP

Cost: \$462,000.00

Funding: HMGP, Individual Funds

Status: Two safe rooms were installed in the Coates Bend Community in 2014 using Hazard Mitigation Grant Program (HMGP) funds. One new safe room was installed in the Gallant Community using HMGP funds. The Etowah County Commission has submitted applications for four new community safe rooms throughout the northern and western portions of the county through HMGP. The Etowah County Commission will also be assisting with the installation of two safe rooms in the East Gadsden area using HMGP funds. The goal will be to get these installed within the next two years.

Whorton Bend Road- Stream bank Protection (Rip Rap)

Estimated Time Frame: 3 years

Estimated Cost: \$100,000.00

Funding Source: EPA, DoT, CDBG, HMGP, PDM, Acoe

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for landslides and sinkholes subsection in this plan.

Bud Umphrey Road – Barstow Creek Flooding

Estimated Time Frame: 3 years

Estimated Cost: \$50,000.00

Funding Source: CDBG, HMGP, PDM, FMA

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Coosa Drive Drainage Improvements

Estimated Time Frame: 5 years

Estimated Cost: \$100,000.00

Funding Source: CDBG, HMGP, PDM, FMA, ACoE

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

River Run Road Drainage Improvements

Estimated Time Frame: 3 years

Estimated Cost: \$100,000.00

Funding Source: CDBG, HMGP, PDM, FMA, AcoE

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Adams Road Drainage Improvements

Estimated Time Frame: 3 years

Estimated Cost: \$100,000.00

Funding Source: CDBG, HMGP, PDM, FMA, ACoE

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Cox Gap Road Drainage Improvements

Estimated Time Frame: 3 years

Estimated Cost: \$100,000.00

Funding Source: CDBG, HMGP, PDM, FMA, ACoE

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Remove Trees and Brush from Right of Way to Mitigate Ice and Wind Storms

Estimated Time Frame: 3 years

Estimated Cost: \$200,000.00

Funding Source: CDBG, HMGP, PDM, FMA, ACoE, EPA, DoT

Status: This project has not been completed. Etowah County remains interested in completing this project. It has been included in the Goals and Actions subsection for winter storms in this plan.

CITY OF GADSDEN

Street Tree Assessment Project to Address Debris from Severe Storms

Estimated Time Frame: 5 years

Estimated Cost: \$100,000.00

Funding Source: EPA, CDBG, PDM

Status: This project has not been completed. The City of Gadsden remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms in this plan.

Dangerous Tree Removal Project

Estimated Time Frame: 10 years

Estimated Cost: \$300,000.00

Funding Source: Partnership w/ Alabama Power, CDBG, HMGP, EPA, Arbor Society

Status: This project has not been completed. The City of Gadsden remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms in this plan.

Drainage Projects to Address Flooding in the Following Areas:

- Agricola Shopping Center \$ 900,000.00
- 6th Street \$1,600,000.00
- Oak Park \$ 800,000.00
- South 4th Street \$ 200,000.00
- Herring/Herzberg \$ 200,000.00
- Forrest Avenue \$ 250,000.00
- Goldenrod Avenue \$ 75,000.00
- Etowah Park \$ 900,000.00

- South Gadsden \$ 500,000.00
- Arrowhead \$ 400,000.00
- East Broad Street \$ 300,000.00
- Stonewall \$ 450,000.00
- Mill Village \$ 600,000.00
- Belleview/MonteVista \$ 400,000.00

Funding Source: CDBG, HMGP, PDM, FMA, ACoE

Status: These projects have not been completed. The City of Gadsden remains interested in completing these projects. They have been included in the Goals and Actions subsection for floods in this plan.

Acquisition of approximately 25 properties located in Special Flood Hazards Areas

Time Frame: ASAP

Cost: \$1,350,000.00

Funding: HMGP, PDM, City Funds

Status: This project has not been completed. The City of Gadsden remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

CITY OF GLENCOE

Drainage Improvements Along:

- Larry Street
- Larrydale Drive
- Macon Drive
- Glenport Avenue

Estimated Time Frame: 3 years

Estimated Cost: \$100,000.00

Funding Source: CDBG, HMGP, PDM, FMA, ACoE

Status: These projects have not been completed. The City of Glencoe remains interested in completing these projects. They have been included in the Goals and Actions subsection for floods in this plan.

Drainage Improvements along Taylor Road

Time Frame: ASAP

Cost: \$350,000.00

Funding: HMGP, PDM, Community Funds, CDBG

Status: This project has not been completed. The City of Glencoe remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Drainage Improvements along Taylor Road

Estimated Time Frame: ASAP

Estimated Cost: \$350,000.00

Funding: HMGP, PDM, Community Funds, CDBG

Status: This project has not been completed. The City of Glencoe remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

CITY OF HOKES BLUFF

Eastvue Ave Drainage Improvements

Estimated Time Frame: 5 years

Estimated Cost: \$50,000.00

Funding Source: CDBG, HMGP, PDM, FMA

Status: This project has not been completed. The City of Hokes Bluff remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Installation of Community Storm Shelters

Estimated Time Frame: 3 Years

Estimated Cost: \$25,000.00

Funding Source: HMGP, PDM

Status: This project has not been completed. The City of Hokes Bluff remains interested in completing this project. It has been included in the Goals and Actions subsection for tornadoes in this plan.

City Hall Roof Retrofitting

Estimated Time Frame: 3 Years

Estimated Cost: \$50,000.00

Funding Source: CDBG, PDM

Status: This project has not been completed. The City of Hokes Bluff remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms and winter storms in this plan.

TOWN OF MOUNTAINBORO

Rock Stabilization along Highway 431

Estimated Time Frame: 3 years

Estimated Cost: \$50,000.00

Funding Source: DoT, HMGP

Status: This project was not completed and has been removed from the new plan.

CITY OF RAINBOW CITY

Police Station Communication System Improvements

Estimated Time Frame: 3 Years

Estimated Cost: \$50,000.00

Funding Source: DoJ, CDBG, HMGP

Status: This project was completed in 2012 when Rainbow City moved to the 800 MHz system.

Drainage Improvements Selected Areas

- Whorton Creek

- Dry Creek
- Gilmer Lane
- Brown Ave
- Westminster

Estimated Time Frame: 5 Years

Estimated Cost: \$500,000.00

Funding Source: HMGP, FMA, CDBG, PDM

Status: These projects have not been completed. The City of Rainbow City remains interested in completing these projects. They have been included in the Goals and Actions subsection for floods in this plan.

Installation of Community Storm Shelter

Estimated Time Frame: 3 Years

Estimated Cost: \$25,000.00

Funding Source: HMGP, PDM

Status: This project has not been completed. The City of Rainbow City remains interested in completing this project. It has been included in the Goals and Actions subsection for tornadoes in this plan.

Community Center/ Library Roof Retrofitting

Estimated Time Frame: 5 Years

Estimated Cost: \$150,000.00

Funding Source: HMGP, CDBG, PDM

Status: This project has not been completed. The City of Rainbow City remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms in this plan.

TOWN OF REECE CITY

Drainage Improvements Selected Areas:

- Nichols Road
- Donald Road
- Higdon Road
- Crudup Road
- 500 Block of Highway 11

Estimated Time Frame: 5 Years

Estimated Cost: \$150,000.00

Funding Source: CDBG, HMGP, FMA, PDM

Status: These projects have not been completed. The Town of Reece City remains interested in completing these projects. They have been included in the Goals and Actions subsection for floods in this plan.

TOWN OF RIDGEVILLE

Installation of Community Storm Shelter

Estimated Time Frame: 3 Years

Estimated Cost: \$25,000.00

Funding Source: HMGP, PDM

Status: This project has not been completed. The Town of Ridgeville remains interested in completing this project. It has been included in the Goals and Actions subsection for tornadoes in this plan.

Drainage Improvements Main Street

Estimated Time Frame: 5 Years

Estimated Cost: \$50,000.00

Funding Source: FMA, CDBG, HMGP

Status: This project has not been completed. The Town of Ridgeville remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

Town Hall Roof Retrofitting

Estimated Time Frame: 3 Years

Estimated Cost: \$30,000

Funding Source: HMGP, CDBG, PDM

Status: This project has not been completed. The Town of Ridgeville remains interested in completing this project. It has been included in the Goals and Actions subsection for severe thunderstorms and winter storms in this plan.

TOWN OF SARDIS CITY

Bridge Reinforcement/Retrofit

Estimated Time Frame: 2 years

Estimated Cost: \$150,000.00

Funding Source: DoT, CDBG, HMGP, PDM, ACoE,

Status: This project has not been completed. The Town of Sardis City remains interested in completing this project. It has been included in the Goals and Actions subsection for floods in this plan.

CITY OF SOUTHSIDE

Drainage projects in the following areas:

- Hall Drive
- Robertson Street West
- Cedar Bend Road at Miller Creek
- Cedar Bend Road and Richland Way
- N and S Abernathy Circle
- Island Way
- Green Valley Lake Estates- Vista Trail and Lakemont Drive
- Valley Lake Drive
- South Valley Road in the Berkley Hills Area
- Rosewood Lane

- Mountainview Drive
- Robertson Street East
- Watson Street

Estimated Time Frame: 5 years

Estimated Cost: \$5,000,000.00

Funding Source: CDBG, DoT, HMGP, PDM, ACoE

Status: These projects have not been completed. The City of Southside remains interested in completing these projects. They have been included in the Goals and Actions subsection for floods in this plan.

TOWN OF WALNUT GROVE

Construct a Community Storm Shelter

Estimated Time Frame: 5 Years

Estimated Cost: \$45,000.00

Funding Source: CDBG, HMGP, PDM

Status: The Town of Walnut Grove has submitted an application for one new community safe room through the Hazard Mitigation Grant Program (HMGP). The goal will be to get it installed within the next two years.

Purchase and install a 42Kw backup power generator at the Walnut Grove fire station.

Time Frame: ASAP

Cost: \$25,000.00

Funding: HMGP, PDM, Community Funds

Status: This project has not been completed. The Town of Walnut Grove remains interested in completing this project. It has been included in the Goals and Actions subsection for tornadoes, severe thunderstorms, floods, and winter storms in this plan.